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ABSTRACT

The purpose of this study was to develop a method for assessing aspects of the cognitive functioning of young children from their symbolic play. Subjects were 60 children, aged 3 to 5 years, from middle-class and lower-class families. The study was conducted in two phases, with the following objectives: (1) to identify and analyze aspects of cognitive functioning to be studied from classroom observation, and (2) to investigate developmental changes in symbolic play and assess cognitive functioning levels. A secondary aim of the latter phase was to compare the play of middle-class and lower-class children. Data were collected through written observer narratives. In Phase I observers described as many verbal and nonverbal behaviors (including interactions with others) as possible. Analysis of the data resulted in the identification of three aspects of cognitive functioning for classroom observation of symbolic play: symbolic representation, involvement and language. These aspects were studied in Phase II. A guide for recording symbolic play and a manual of procedures for analysis of symbolic play were developed; both are included in the appendices. Investigation of developmental changes in group play found trends in 11 of 30 categories studied, some in each of the three cognitive areas. The symbolic play of middle-class children was found to be similar in quality to that of lower-class children. (Author/BF)

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COGNITIVE ASPECTS OF YOUNG CHILDREN'S SYMBOLIC PLAY

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Final Report

PS 009146

September 1976

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Acknowledgments

Studies in which the data consist of observations in classrooms are completely dependent on the cooperation and goodwill of the schools in which they are located. We wish to express our gratitude to the directors of the Head Start and day care centers and of the independent schools for their help and hospitality; to the teachers who willingly, and sometimes enthusiastically, allowed us to observe the children; and to the children themselves.

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I. INTRODUCTION

Purpose of Study

The ultimate purpose of this study was to develop a method for assessing aspects of the cognitive functioning of young children from their symbolic play. The study was conducted in two phases.

The major objectives of Phase I were: (1) to identify those aspects of cognitive functioning which could be appropriately studied from observations of children's symbolic play; and (2) to devise methods for analyzing the play with respect to these selected aspects.

The major purpose of Phase II was to investigate the developmental changes that take place in the symbolic play of children of three, four, and five years of age (from both middle-class and lower-class families) with respect to the selected dimensions, and to devise a scheme for assessing the level of the children's cognitive functioning in these respects, if possible. The secondary aim was to compare the play of middle-class and lower-class children in order to determine the areas of similarity and difference.

Since this has been primarily a methodological study, the emphasis in this report will be on procedures, their rationale, and the problems involved in doing such a study--particularly those arising from the nature of symbolic play and from the use of naturalistic rather than experimental situations.

This study was undertaken at a time when there was a surge of concern about the difficulties experienced in school by children from economically impoverished homes who lacked the stimulating environment, kinds of relationships and social interactions characteristic of middle-class homes. These "disadvantages" were considered by many psychologists to be the source of lower-class preschool children's relatively poorer verbal and classification abilities, and lack of understanding of spatial and temporal concepts, etc., which contributed to low achievement in school (John and Goldstein, 1964; M. Deutsch, 1963 and 1964; Sigel, 1968).[1]

This, among other concerns, resulted in the establishment of the Head Start program and the rapid proliferation of year-round Head Start centers for preschool children. It also produced a rash of studies aimed at finding out the specific differences between lower-class and middle-class children with respect to their cognitive functioning as well as the sources of these differences (Bloom, Davis and Hess, 1964). On the basis of their findings, many of the investigators prescribed, and often translated into reality, intervention programs designed to overcome the "cognitive deficits" which they found in "disadvantaged" preschool children (Feldmann, 1964). The period was characterized, therefore, by a tremendous emphasis on the mastery of certain cognitive skills as well as by an overwhelming increase in the testing of preschool children.[2]

This study was based on the view that the word "cognitive" refers to a larger domain than it was currently being applied to. It was also rooted in the firm conviction that testing young children, particularly "disadvantaged" children, did not provide a true evaluation of their cognitive capacities and functioning (because of the nature of the tests as well as the testing situation) and that, therefore, it would be worthwhile to develop non-test methods for assessing certain aspects of cognitive functioning.

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[1] There is a vast literature, produced during the sixties, relating to lower-class children and their "cognitive deficits." Only a few examples are cited here, since the subject matter is unrelated to this study except as the impetus for its conception.

[2] Standardized tests such as WISC, Lorge-Thorndike, Peabody Picture Vocabulary Test, and others were used as well as some which were constructed to serve a specific purpose, e.g., Gotkin, Caudle, Kuppersmith and Wich's Standard Telephone Interview (1964).

Review of the Literature

That symbolic play is important for children's cognitive as well as affective development is not a new idea. A number of writers, from a variety of disciplines and with different points of view, have expressed the belief that symbolic play is essential to the child's growth and development, both affective and cognitive. Of these, the contributions of Piaget (1962), Griffiths (1949), Isaacs (1944), and Peller (1952, 1954) are especially significant. Griffiths, Isaacs, and Peller represent the psychoanalytic point of view which, broadly stated, is that symbolic play is a medium through which children solve their inner conflicts and developmental problems. They also stress other, more obviously cognitive, aspects of play. Griffiths found, in her study of five-year-old lower-class children, that developmental problems are attacked indirectly, often disguised by symbolism, the child being only vaguely aware of the end toward which s/he is striving. "The problem develops by means of successively imagined solutions which constitute a piecemeal and gradual resolution of the problem" (Griffiths, 1949, p. 187).

The central function of play is the gradual assimilation of anxiety, according to Peller (1954). She also points out (1952) that, although thinking respects the laws of reality and play ignores them, there are several similarities between play and reasoning: neither has direct consequences in the outer world; in both, certain elements of reality are selected and varied; both are far quicker than is direct action in reality; both require imagination; and both overcome the obstacles of time and space with great facility (pp. 81-82).

Isaacs (1944) points out that "imaginative play...create(s) practical _situations_ which may often then be pursued for their own sake, and thus lead on to actual discovery, or to verbal judgment and reasoning" (p. 99). She states further: "In his make-believe, [the child] takes the first steps towards that emancipation of meanings from the here and now of a concrete situation, which makes possible hypotheses and the 'as if' consciousness" (p. 104).

Piaget (1967) has described the progressive organization of mental development, from infancy to adolescence, as "simply an ever more precise adaptation to reality" (p. 8). He conceives of mental development as proceeding by means of two processes--accommodation and assimilation. Accommodation is the process through which the child changes her/his mental schema or structures by adapting them to the external world, i.e., to objective reality. Assimilation is the process through which objects and people in the external world are incorporated into already existing internal schema or structures. During infancy and early childhood, assimilation and accommodation are not in equilibrium. Sometimes accommodation is predominant, as in "imitation," while assimilation is predominant in symbolic play. Piaget (1962) considers imitation, symbolic play and cognitive representation--the various forms of representative thought--"as being interrelated, and their evolution as being dependent on the gradual establishment of equilibrium between assimilation and accommodation" (p. 273).

Piaget (1962) describes the various stages of symbolic play from its onset to age seven. The earliest stages involve: using an object as if it were another; making an object imitate the actions of another object, person or animal; the child imitating the actions of others but with no identification; the child identifying her or his own body with that of another person, animal or object; and the construction of whole scenes which become more complex as the child gets older. During the period from four to seven, symbolic play is characterized by "an increasing desire for verisimilitude and exact imitation of reality" (because there is a gradual decrease in egocentrism); "the relative orderliness of the ludic constructions" as compared with less coherent play at earlier ages; and "the appearance of collective symbolism...with differentiation and adjustment of roles" (p. 135).

Others, who were concerned with teachers' as well as children's learning, and were closer to classroom situations, pointed out through analysis of specific examples of play what teachers can learn about the child's level of conceptualization from her/his play (Biber, 1965) as well as what a child learns from the impingement of reality on her/his symbolic play (Almy, 1967).

Biber (1967) also links the cognitive and affective aspects of symbolic play. She sees play as "a special kind of tool for learning, suited to the idiom of childhood, which fuses the wondering, problem-solving, and conceptualizing of the groping child mind with the symbolic expression of the wishes and fears, longings for strength, pleasures, and pains of forming the inner self" and "as a form of learning contributing to mastery and ego strength" (p. 149).

Despite the large literature linking symbolic play with cognitive development, only one study has been completed which demonstrates this relationship (Golomb, 1975). The results of this study indicate a clear improvement in conservation performance of the children in the experimental group who underwent symbolic play training as compared with the control group. Golomb points out that a similar process underlies both symbolic play and conservation attainment --the ability to maintain the identity of an object in spite of its transformation (in symbolic play, the child's identity when s/he is a signifier or the identity of an object used as a symbol).

There have been numerous studies of symbolic play. Very few have been concerned with the conscious symbolism of play per se. During the thirties, forties and fifties, the emphasis was on investigating the relationship between such variables as aggression during doll play and age, sex, father separation and sibling rivalry.[1] Earlier still, studies of play had been concerned with the content of dramatic play, roles imitated in play, importance of toys in dramatic play, toy preferences in relation to sex of child;[1] or size of play groups, techniques of gaining entrance to play groups, play content, etc. (Parten, 1933).

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[1] For a review of these studies, see Levin and Wardwell, 1962.

After we had selected areas for study and had developed methods for analysis, other studies were published. Smilansky's study of "The Effects of Sociodramatic Play on Disadvantaged Pre-School Children" (1968) consists of two phases: the first is a comparison of the sociodramatic play of lower-class and middle-class Israeli children; the second is concerned with the effects on lower-class children of teaching them how to play symbolically. In the first phase, which is more relevant to our study, records were taken of the play of three- to six-year-old middle-class and lower-class children in school. The results are given, for the most part, in terms of the social class groups as a whole, only occasional differentiation being made between age levels. Some of the variables studied are, however, very similar to ours. Smilansky found substantial differences between the two groups in what she considers the six basic components of symbolic play as well as all other aspects of play, the play of the lower-class children being strikingly more limited than that of the middle-class children. She claims that the differences are not due to differences in the rate of development but involve a difference in basic style.[2] Later, Eifermann (1971) conducted a large-scale study of the symbolic play of six- to 14-year-old lower- and middle-class Israeli children. The children were observed during their outdoor recess period in school. Eifermann was concerned mainly with the quantity of play, i.e., the number of children who participate.

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[1] Hurlock (1934) reviews these studies.

[2] But she does not give any figures to document her conclusions.

She found that a much larger percentage of lower- than middle-class six- and seven-year-olds engaged in symbolic play. She interprets this to mean that the lower-class children reach the peak of symbolic play at a later age than do the middle-class children. Thus, contrary to Smilansky, she interprets her findings in terms of a developmental lag in the symbolic play of lower-class children with respect to amount of play.

Two American psychologists, Griffing (1974) and Rosen (1974), used Smilansky's six components of symbolic play and method of categorization for comparing advantaged and disadvantaged children. As a prelude to an intervention study with a sample of disadvantaged children, Rosen compared black lower-class and white middle-class kindergarten children. She found that the white middle-class kindergarten children engaged in more sociodramatic play and "often at a more sophisticated level" than the black lower-class children (p. 926). Sophistication is not defined, however. She also states that the play of black children from middle-class oriented homes is more similar to that of white "advantaged" than of black "disadvantaged" children.

Griffing's population consisted of five- and six-year-old black middle-class and lower-class children. Unlike the other comparative studies, Griffing set up special playrooms in each school with three play areas--a doctor's corner, a housekeeping area, and a store. Four children (two boys and two girls) were randomly chosen to play for one-half hour in the special playroom. She found very clear differences in all six components of sociodramatic play. She points out, however, that there was considerable variability in both groups, that the most imaginative play episode was that of two lower-class children, and that some middle-class children had very low scores.

Other less clearly detailed studies support Smilansky's findings. Sigel (1968), studying American children, states that observations of the play behavior of lower-class Negro children reveal that "the play of these children appears to be motoric, action based, with minimal use of imagery or pretending or role playing" (p. 5). Singer (1973) states that a comparison of the symbolic play of five-year-old children in two separate studies presented in his book, Pulaski's and Freyberg's, "seem in line with those of Smilansky." The mean for fantasy play of the upper-middle-class children who attended private school was higher than that of the poor ghetto-school kindergartners.

When this study was begun, only two systematic developmental studies had been done (Markey, 1935; Lunzer, 1959). Later, a third, more comprehensive one, was done by Halfar (1970). Only Halfar's and Lunzer's focus on symbolic play alone. Markey studied "imaginative play," which included such activities as painting, "fibbing," playing peek-a-boo as well as symbolic play. She found that the total imaginative behavior score was higher for children of relatively older ages than for younger children.

Lunzer observed the play behavior of 63 English children who ranged in age from two years and two months to six years and one month. Of these, 41 were observed individually in school for four half-hour periods by their own teachers. The rest were observed four at a time in a specially set up playroom. Lunzer, whose population is not defined in specific ethnic or socioeconomic terms, found a clear trend in organization of behavior (including both adaptiveness in the use of materials and the degree of articulation and coherence in the play episode as a whole) and in cooperation (a nine-point scale including solitary, parallel and cooperative group play as well as non-play social interaction and conversation).

Halfar's (1970) sample consisted of 38 middle-class children, most of whom were white, and ranged in age from three years and four months to six years and three months. The children, who attended three different schools, were observed in their classrooms, the data consisting of 15-minute observations, as well as, in one school, five-minute samples of free play behavior. Although she used Smilansky's method, she adapted it in order to "provide a fuller picture...of the typical symbolic play of young children and its variation with age and sex" (p. 4). She developed operational definitions for several qualitative characteristics of symbolic play which Smilansky reported descriptively, and was thus able to measure them quantitatively. Her results indicate that there are both developmental trends and sex differences during this age period.

Other studies indicate somewhat different areas of interest. The Singers (1973), in an ongoing study of two- to five-year-old middle-class children in a private nursery school, found no consistency in fantasy play tendencies between structured play situations and unstructured play situations. There was, however, a statistically significant difference in the amount of "make-believe" play, more in the unstructured than in the structured situation. The definitions of "structured" and "unstructured" are unclear in this study and may be confounded with indoor as opposed to outdoor play behavior.

Gould (1972), using both Piagetian and Freudian concepts in her study of middle-class children's fantasy play, has derived a series of developmental cognitive-affective signposts which can be useful to teachers of young children as well as in research which uses symbolic play as a medium for understanding children.

Recently, other studies of play have been reported but they are concerned with imaginativeness of play (Pulaski, 1970; Singer, 1973) and the relationship of symbolic play to creativity (Dansky and Silverman, 1973; Feitelson and Ross, 1973).

II. THE SAMPLE

As indicated previously, this study was conducted in two phases. Because the first phase was primarily methodological, we shall delineate the methods used for selecting the Phase II sample in greater detail than those used for selecting the Phase I sample. But it should be noted that, because of insufficient time and staff, and the unexpected difficulties involved in finding a sample which met our Phase II criteria, some of the Phase I children who met the Phase II criteria are included in the final sample.

Criteria For Selecting the Educational Settings

Phase I. In order to provide the wide range of symbolic play records needed for identifying the aspects of cognitive functioning which could be appropriately studied from symbolic play, the criteria for selection were differences between the schools in educational goals and teaching methods, as well as in the socioeconomic background of the children.

Phase I Supplementary Sample. Preliminary analysis of the Phase I data indicated that a more valid comparison of the lower-class and middle-class children required a supplementary sample of Head Start children which would be more comparable, in terms of the educational environment and the teacher's attitude toward symbolic play, to the Phase I private school and the OEO-funded program with a mixed population.

Phase II. Since our major objective was to investigate the developmental changes that take place in the symbolic play of children from age three to age six, our projected sample was to consist of middle- and lower-class three-, four-, and five-year-old children.

Our aim was to control those factors which seemed likely to influence the quality of symbolic play. We proposed, therefore, to select school settings on the basis of equivalence with respect to the following:

1. Type and quantity of educational equipment and materials;

2. Teacher's attitude and role in relation to symbolic play, i.e., s/he should be aware of symbolic play as an important activity in the lives of young children and be neither too involved in their play nor have a hands-off policy;

3. Opportunity for the children to engage in free play indoors.

Because of the stringency of these requirements, we hoped to locate our sample in two or three day care centers and an equal number of independent schools which would be equivalent with respect to the above criteria.[1]

Criteria for Selecting the Children

Phase I. There were three criteria: (1) age (four years of age, the most prevalent age in Head Start in New York City at the time); (2) socioeconomic status (to include both middle-class and lower-class children); and (3) that the children engage in symbolic play.[2]

Phase I Supplementary Sample. In addition to the three Phase I criteria, the children were to be more similar in ethnic background to the Phase I private school and the OEO-funded program with a mixed population.[3]

Phase II. Criteria for selecting the children, in addition to age, were defined as follows:

1. Socioeconomic status: "Poverty level" for the families of the lower-class children; college education or professional or high status occupation

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[1] We decided to use day care centers, rather than Head Start centers because, in New York City, only day care centers serve children of three, four, and five years of age, as do most private schools. Thus, the number of educational sites would be limited and the day care and independent school samples would be more likely to be comparable in length of school experience.

[2] The sample consisted of 28 children, ranging in age from 4:3 to 5:0.

[3] Six children were selected ranging in age from 4:3 to 4:11.

for the parents of the middle-class children. This criterion was chosen and applied in such a grossly dichotomized form because of the differences that other investigators (e.g., Smilansky, 1968 and Sigel, 1968) had found in the quantity or quality of the symbolic play of middle-class and lower-class children. Also, in a small exploratory study such as this, it did not seem appropriate to invest time and energy in getting differentiated data about the family background of the children.

2. Sex: An equal number of boys and girls in each socioeconomic group at each age level.

3. School experience: The same amount of school experience for lower- and middle-class children at each age level.

4. Ethnicity: Comparable for lower- and middle-class groups.

5. Language: Native language should be English. Since the role of language was to be part of the study, it was considered essential that English be the child's first language.

Problems of Sample Selection

The basic requirement for selecting the school settings was that the children engage in symbolic play. Because there were few other requirements, the Phase I sample presented little difficulty once centers had been located in which the children engaged in symbolic play. Phase II sampling was considerably more difficult. To meet our requirements we needed to find day care centers in New York City in which there were children from "poverty level" families who engaged in symbolic play, were ethnically comparable to the middle-class children and whose native language was English. This turned out to be impossible, despite considerable search. Virtually no children could be found in day care centers who fulfilled social class, language and ethnic background requirements. We decided, therefore, to locate the study in centers where we knew we could find children from "poverty level" families. Here the choice was between children who were ethnically comparable to the middle-class group but whose native language was not English and those whose native language was English but were not comparable in ethnic background. Since the role of language was a major focus in the study, it was decided to drop the ethnic background requirement as a criterion. As a result, the lower-class three- and four-year-old sample was located in centers where the populations were almost entirely black.

The other major problem affecting the composition and size of the sample was that, with the limited time at our disposal, we were unable to find school settings in New York City in which there were enough lower-class five-year-olds who engaged in symbolic play, since Head Start does not include five-year-olds and there appeared to be few public school kindergarten classes in which symbolic play can be found. Also, we were unable to complete the Fours sample, and had to include some of the Phase I children who met our Phase II criteria.

Procedures for Sample Selection

In Phase I four schools were selected on the basis of observation in the classrooms and informal interviews with directors and/or teachers: a private school with a predominantly white middle-class population; an OEO-funded program for disadvantaged children with mixed ethnic background, sponsored and administered by a private college; two Head Start programs, one sponsored by a community action agency in which all the children were black, and the other with a mixed population located in a settlement house.

In Phase II selection procedures were systematic and formal. They consisted of: a preliminary conversation with the director of the center or school; an interview with the director of eligible schools to provide more detailed information about the study and to get specific information about the children relevant to our criteria; observation of the teacher during the indoor play period, and subsequent rating on a number of items relevant to our selection criteria; an informal interview with the teacher about her usual schedule; taking an inventory of available materials and equipment and making a rough sketch of the classroom, indicating activity areas and placement of equipment.

Although these procedures for selection were always followed, in some cases we began collecting data in schools before we had officially "located" all of them. Thus, if the children met most of our criteria, if the director and teacher were willing to accommodate us, if there was opportunity for symbolic play and we observed some going on, we were compelled to forego other criteria, such as the teacher's role with respect to symbolic play, in order to assemble our sample.

For selecting the children, information about the age, length of previous school experience and socioeconomic status of the families was obtained from the directors or teachers. In the Head Start and day care centers information as to the specific occupational or educational status of parents was held confidential and was therefore inaccessible to us. For the middle-class group the preschool directors provided information about each family if they had it, or, in one school, obtained the information from the parents for us. For the remainder of the middle-class sample, children were selected on the basis of assurances from the director as to the assumed educational or occupational status of the parents.

Characteristics of the Educational Settings

The children in all the selected classes (Phase I and Phase II) had the opportunity to engage in symbolic play if they wished, during the indoor free play period which usually lasted about an hour.

In most preschool classrooms, the major areas in which symbolic play takes place are the blockbuilding and house areas. All the study classrooms had blockbuilding areas, and all had good supplies of Carolyn Pratt unit blocks. The Head Start classrooms also had large hollow blocks (generally considered outdoor equipment), which were used in symbolic play. In all the schools, there were the usual accessory materials for use in conjunction with blocks, such as small cars, trucks and other motor vehicles, small animal and human figures, though the Head Start and day care centers had fewer than the independent schools.

Most of the classrooms were set up so that the housekeeping and doll equipment and materials were in the same area. Occasionally the two were in separate but adjoining areas. In general, there was adequate equipment in these areas (e.g., stove, refrigerator, doll bed, dishes, pots and other cooking utensils, dishes, broom and other cleaning equipment, and male and female dress-up clothes), though Head Start centers had considerably more housekeeping equipment than other classrooms. In one, for example, there were two stoves (one electric) and a working, miniature washing machine.

The Head Start and day care centers were equipped with wheeled vehicles, large enough for the children to sit on and move about on. They also had more than one piece of large equipment (possibly because of the absence of good outdoor space and equipment), e.g., a rocking boat, a seesaw, climbing apparatus, steps, a three-sided house with a windowlike opening on one side. The independent school classrooms tended to have only one piece of large equipment.[1]

All the classrooms had good supplies of other kinds of materials attractive to and appropriate for young children. There were easels, paints, crayons, collage materials, and dough. There were books, puzzles, games, and manipulative materials of various kinds. Music and woodworking materials and equipment were not always available although most classrooms had phonographs and records.

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[1] Although we did not inventory the equipment and materials in the Phase I classrooms, it is fairly clear from the records that they were comparable to those of the Phase II classrooms.

The Head Start classrooms tended to have more new, expensive equipment because they were publicly funded and more recently established than did the independent schools which had to depend on tuitions for support.

During Phase II, each of the ten teachers and sometimes the assistant, was rated on five dimensions of teacher behavior which we considered might influence the children's symbolic play. These are: (1) degree to which the teacher gives children freedom to choose their own materials and activities; (2) quality of the teacher's responsiveness to the children's symbolic play; (3) degree to which the teacher stimulates children's ongoing symbolic play; (4) degree to which the teacher attempts to promote symbolic play contacts between children; and (5) degree of teacher's involvement in teaching.[1]

The seven independent school teachers tended to be similar in the degree to which they gave children the freedom to choose their own materials and activities, in the quality of their responsiveness to the children's symbolic play, in the degree to which they stimulated the play and, except for the teacher of one Fives group, in having a high degree of involvement in teaching. There was insufficient data on the teachers' promotion of play contacts between the children.

The variation in behavior of the three Head Start and day care teachers makes it difficult to describe them as a group. They all gave the children some choice of activities, responded to requests for help and materials, but seldom attempted to stimulate the play. They varied considerably in the degree of their involvement in teaching.

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[1] These ratings were usually made on the basis of one observation only since they were intended to serve as a selection criterion. In some cases, therefore, there were no data for a particular rating.

Thus these teachers differed from each other and also from the independent school teachers. Because of the difficulties involved in locating centers which met our criteria with respect to the children and their families, we found it necessary to include teachers who did not quite fit our criteria with regard to their mode of relating to children's symbolic play.

On the basis of the symbolic play records and our memories, we believe that the behavior of three of the five Phase I teachers were within the range of the Phase II teachers. There were, however, two centers in which the teachers differed from the Phase II teachers. One teacher had a laissez-faire attitude toward symbolic play and showed a general lack of interest in children's play. The other participated very actively in the children's play in order to stimulate it.[1]

Characteristics of the Sample Children

The final sample consists of 60 children.[2] Thirty-six (12 Threes, 12 Fours and 12 Fives) come from middle- or upper-middle-class homes and attended five different independent schools--four in New York City and one in Westchester. Twenty-four children (12 Threes and 12 Fours) come from "poverty level" homes and attended five different Head Start centers in New York City and one day care center in Westchester.

Number of classes and schools or centers attended: In three schools the children come from more than one class. In all, the 60 children attended eleven schools and 14 different classes. For each age level and socioeconomic group the children come from no fewer than two classes and schools so that the results were not unduly influenced by any single teacher or school.

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[1] But we did not use any records in which the teacher influenced the play behavior of the children. See p. 27, Table I.-2).

[2] Includes Phase I as well as Phase II children.

Phase: Twelve (21%) of the children were observed during Phase I, five (8%) during Phase I Supplementary, and 43 (71%) during Phase II. The following table gives the distribution by Phase.

Table II-1

Distribution of Sample by Phase

Phase	Threes		Fours		Fives	Total
	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class	
I	0	0	5	6	1	12
I Sup.	0	0	0	5	0	5
II	12	12	7	1	11	43
Total	12	12	12	12	12	60

Sex: The children are divided equally with respect to sex at each age level and for each socioeconomic class as can be seen in Table II-2.

Table II-2

Distribution of Sample by Sex

Socioeconomic Status	Threes		Fours		Fives		Total
	Boys	Girls	Boys	Girls	Boys	Girls	
Middle-class children	6	6	6	6	6	6	36
Lower-class children	6	6	6	6	0	0	24
Total	12	12	12	12	6	6	60

Age and Length of School Experience: As can be seen in Table II-3, for the three- and four-year-old children the age range is slightly different for middle-class and lower-class groups. The median age difference between the social class groups at age 3 and 4 is one and a half months. At age 3 the median age of the lower-class group is one and a half months higher and at age 4 one and a half months lower than the middle-class median. At age 4, the lower-class children are both younger and have had less school experience than their middle-class counterparts.

Table II-3

Age of the Children and Length of School Experience

	Threes		Fours		Fives
	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class
Age Range	3:4 - 3:9	3:5 - 3:10	4:4 - 4:11	4:3 - 4:9	5:1 - 5:10
Median Age	3:7½	3:9	4:7½	4:6	5:5½
Median length of school experience	5 mos.	4 mos.	1 school year + 2 mos.	8 mos.	1 school year + 6½ mos.

Ethnic Background: All the middle-class children in the sample are white.[1] As mentioned previously, the population of the Head Start centers in the New York City area consists mainly of blacks and children whose native language is not English. Since we considered native language a more important criterion than ethnic background, most of the lower-class sample is black (see Table II-4).

Table II-4

Ethnic Background of the Children

	Threes		Fours		Fives	
Ethnic Background	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class	Total
White	12	0	12	5	12	41
Black	0	12	0	7	0	19

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[1] The few non-white children in the middle-class groups were eliminated because they did not meet other selection criteria.

Native Language: The native language of all the children in the sample is English.

To sum up: Except for the lack of a lower-class Fives sample, our requirements with respect to age, sex, socioeconomic background and native language were met. The difference in median age between lower-class and middle-class Threes and Fours is relatively minor, as is the difference in length of school experience.

Although it would have been preferable to have a sample consisting of all white or all black children, so that lack of comparability with respect to ethnicity would not have been an additional, uncontrolled variable, this turned out to be impossible in the New York City area. Thus, all the middle-class children and only one-fifth of the lower-class children are white.

Despite the lack of specific information about individual lower-class families, there is a large difference in the socioeconomic backgrounds of the middle-class and lower-class groups. It is our impression that, even if any of the lower-class children in the sample do not come from "poverty level" families, there is a large enough difference between them and the quite affluent and well-educated middle-class families to produce differences in the children's symbolic play if this is indeed an influencing factor.

The selected classrooms met our criteria well with respect to opportunity to engage in symbolic play and play materials and equipment; less so with respect to the teachers' role vis-a-vis children's symbolic play.

III. PROCEDURES FOR DATA COLLECTION

Rationale for Data Collection Procedures

Classroom observation was chosen as the procedure best suited for studying children's symbolic play. The other possibilities, such as observation in the home, presented too many disadvantages and obstacles. Although a child's play at home might be most representative of her/his capacities since s/he would be in her/his most familiar surroundings, the conditions (e.g., the available space, toys and materials, interruptions of siblings and parents, etc.) would vary too much to provide comparable data. Moreover, the logistics and time it would take to collect home data would have strained our resources beyond their limits.

Because we were to derive our observation categories from the data collected during the initial phase of the study, it was decided to use narrative recording during Phase I in the interest of obtaining the fullest possible record. This involves taking continuous records of the child(ren)'s behavior, including both what is done and said and how it is done and said. Our subsequent observation of the fluidity and unpredictability of children's symbolic play convinced us that we had made the right decision.

The focus of observation was on the individual child because our goal was to develop a method for assessing the cognitive functioning of individual children from their symbolic play. We did not wish to focus on the symbolic play regardless of the number of children participating, as Smilansky (1968) did, because this would have made it impossible to retrieve the individual child's play from the group's or to know whether there was enough play data for our purposes.

Observation was limited to the indoor play period, which usually lasted about an hour. Outdoor play was not observed, both because children tend to engage more in motor activity ourdoors than in symbolic play, and because we knew that Head Start centers often did not have well-equipped outdoor play spaces.

The question of whether to use tape recording in addition to, or instead of, pencil and paper recording was given serious consideration. We knew that an observer, however skillful, would probably not be able to write down everything that happened in a given observation. On the other hand, a tape recorder could not take account of body movements or gestural expression. A tape recorder also does not discriminate sufficiently: in a noisy room with poor acoustics and mobile children, relevant material would be inaudible and non-essential material would be recorded.[1] Finally, voices could only be identified by the observer, which would make secretarial transcription a problem. The only other alternative was for the observer to dictate into a microphone while observing. Although some investigators have found this method useful, we decided against it on the grounds that it would be too obtrusive, especially when the child being observed was playing alone or during periods of relative quiet.

Data Collection

The basic procedure was that one observer recorded, in writing, the behavior of one child throughout the indoor play period, which usually lasted about an hour. During Phase I, such narrative records were taken of all the child's play behavior. The observer recorded as much as possible of this behavior, both verbal and non-verbal, including interaction with other children or adults who were involved in the play or with whom the child made contact during his play. This all-inclusive method was chosen for several reasons.

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[1] Although there is very expensive equipment which reduces irrelevant sound, the other objections to electronic recording remain.

First, it was not known during Phase I what aspects of symbolic play would be studied or what dimensions and specific categories would be used in the analysis. Second, it was not always possible for an observer to know at what point a child's play became symbolic and when the symbolic play ended, nor did we wish to rely on the observer to make this judgment at this point in the study. Third, if there were not enough symbolic play data, or if appropriate methods could not be devised for analyzing cognitive aspects of symbolic play, other play behavior might be used in addition or instead.

Our experience during Phase I underlined the necessity for narrative records, and the same recording method was used for the Supplementary Sample. The identification of areas and dimensions of study, as well as the development --during Phase I--of methods for analyzing symbolic play, clarified the details which were to be included in the record and a Guide for recording symbolic play was written, which was used by the observers during Phase II and which contained detailed instructions about what was to be recorded and how.[1] Since the cues that indicated the beginning and end of symbolic play had already been clarified, the observers were now instructed to take only summary notes when a child was engaged in other play activities, e.g., painting, clay, puzzles.

The Observers

All the observers had had professional training or experience in the field of early childhood education. Before data collection began, they were given special training in taking narrative records of children's play behavior. For Phase I, there were four observers. During Supplementary Phase I, one of these four did all the observations. In addition to her observation and recording skills, this observer had helped to code the Phase I data. During

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[1] See Appendix B.

Phase II, this same observer took all the records on the Threes; the Principal Investigator took all the records on the Fours; observation of the Fives was shared by these two and a third observer. Except for a very few of the Phase I records included in the sample data, the records are of very high quality.

Number of Observations Per Child

The number of observations of each child varied with each phase because it was related to the goals and exigencies of each phase. During Phase I, the goal was to get a sample of each child's play which was large enough to be representative of the quality of his play at that particular point in his life. Our aim was to do these observations during a period of one to two weeks in order to minimize variability due to developmental changes. We began with four observations of each child and then reduced these to three so that we could observe a larger number of children. The Supplementary Phase I data also consisted of three observations of each child.

It became evident from our experience during Phase I that the data, not unexpectedly, were very variable, both within and across subjects. To determine the minimum number of observations per child which would provide a representative sample of his play behavior would have required a study in itself, which time and money did not allow. Since the study was concerned with age and socioeconomic group comparisons, we decided that for each child, two observations containing symbolic play would be acceptable.

For the Phase II sample, therefore, each child was observed twice during a one- or two-week period. If there was no symbolic play during one or both of the observations, a third observation was done. If there was no symbolic play in the third observation, the child was excluded from the sample.

IV. THE DATA

Observations

A total of 153 observations of 60 children was done during both phases of the study. Of these observations, 123 or 85%, contained symbolic play (see Table IV-1). As expected the incidence of symbolic play is lower at age three than at age four or five. There is little difference between middle-class and lower-class children in the percentage of observations with symbolic play and even these minor differences vary at age three and age four.

Most observations lasted approximately an hour, the median length of the play period across all classrooms ranging from 48 minutes to 87 minutes (see Table IV-1). The length of the play period is a measure of the opportunity the children had to engage in symbolic play.[1] It was shorter for the lower-class than for the middle-class Threes and Fours. Whether or not the length of the play period affects the presence, absence or amount of symbolic play is a matter for further investigation.

Table IV-1

Number of Observations of Sample Children:
By Age and Socioeconomic Background

	Threes		Fours		Fives	
	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class	Total
Total number of Observations	29	30	32	35	27	153
Average number of observations per child	2.4	2.5	2.7	3.0	2.3	2.6
Number of observations with symbolic play	21(76%)	20(70%)	27(84%)	33(92%)	22(81%)	123(85%)
Median length of play period	60'	48'	87'	60'	62'	

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[1] If the indoor play period was the first activity of the day, its length also depended on the time the child arrived at school.

Play Units

The raw data are narrative records of all the child's play activities, and consist of non-symbolic as well as symbolic play activities. For purposes of analysis we distinguish, within an observation record, between one symbolic play "episode" and another. Thus the play episode or unit becomes the unit of analysis (see Chapter VI for defining criterion).

As shown in Table IV-1, the total number of observations during which symbolic play occurred was 123. The total number of symbolic play units in these 123 records was 274. To ensure comparability, these 274 symbolic play units had to be reduced because of a variety of contaminating factors.

First, 10% of the play units consisted of superhuman or magical play, mostly derived from television programs (e.g. Superman, Gigantor). The decision to exclude such units was based on a comparison between these and real-life play units and the discovery that there were substantial differences in the level of play between the two which strongly suggested that they should not be combined.[1]

Second, units were excluded in which the teacher had influenced the content or direction of the play.

Third, units were excluded in which the "play" consisted entirely of discussion and no other symbolic action.

Finally, "excess" play units were excluded from the analysis. Here we were faced with the uneven distribution of play units among the children, ranging from one to fourteen units per child. A cutoff of a maximum of four units per child was decided on.[2] This reduced, but did not solve the problem of data skewedness. In addition, therefore, a system of weighting was applied to compensate for subjects whose symbolic play contained fewer than four units (see Chapter VII for the details of this procedure).

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[1] See Stern, Virginia, Cognitive Aspects of Young Children's Play, in Progress Report of Research Studies, 1969-1970. Head Start Evaluation and Research Center, Bank Street College of Education.

[2] Guidelines for selecting units included: length of unit (in the average range), equal division between individual and group play, and representation of all observations.

As a result, the original sample of 274 units was reduced to a final sample of 183 units (see Table IV-2). Though the loss of data was relatively severe (91 units) our confidence in the data to be analyzed was substantially increased.

Table IV-2

Distribution of Symbolic Play Units:
Excluded Units and Final Sample

	Threes		Fours		Fives	
Number of Play Units	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class	Total
Total units	50	52	74	56	42	274
Excluded units:						
Superhuman/Magical	2	0	17	5	4	28(10%)
Teacher Involvement and Language only	5	4	0	4	1	14(5%)
Units in excess of 4 per child	2	13	21	9	4	49(18%)
Final sample of units	41	35	36	38	33	183(67%)

Individual and Group Play

Much of what has been learned about children from their symbolic play has come from their individual play in clinical and experimental situations, but investigators who have used the natural situation of the classroom in which to study children's symbolic play have been more interested in group than in individual play. Our data include both, since one of our aims was to develop methods for assessing children's cognitive functioning from their play, and children's individual play is as important an indicator as their group play.

V. ASPECTS OF COGNITIVE FUNCTIONING INVESTIGATED: CATEGORIES OF ANALYSIS

Selecting the major dimensions of study was a step-by-step process which was governed both by theoretical and practical considerations. On the basis of a literature survey and a preliminary analysis of the symbolic play records of the Phase I sample, seven dimensions were tentatively identified, as follows: (1) Use of Symbolic Representation; (2) Involvement in symbolic play; (3) Stance with respect to problem solving; (4) Role of Language during symbolic play; (5) Curiosity and exploration; (6) Concept development; and (7) Knowledge. From these seven, a final choice of the following three was made:

1. Use of symbolic representation
2. Involvement
3. Role of language

The final selection of the above three dimensions was made for two reasons. First, they are of great importance in child development theory; and second, the number of observations we could reasonably make and the period of time in the child's classroom life we could reasonably cover made these three dimensions a more feasible focus of study than others.

Symbolic Representation is the representation of an absent object, person or animal by means of another object or person, real or imaginary. In symbolic play, it takes two forms: (1) the child makes an object (the signifier) imitate the actions of another, absent object (the signified), as when the child moves a "train" made of interlocking blocks along "tracks" made of blocks, saying "choo choo choo"; or (2) the child her/himself is a signifier, as when s/he sits on the first of a line of chairs and "drives" a "bus", using steering motions and making motor sounds.

Symbolic Representation is the most central aspect of symbolic play because it focuses on the concrete characterization of the symbolism itself.[1] It is also the aspect of symbolic play about which least is known, though this picture is changing (see Chapter II). When children develop the capacity to use an object, or themselves, to represent another absent object, person or animal, they are making a tremendous cognitive leap--well recognized as a developmental milestone. Furthermore, this representational capacity is plainly to be seen in the child's spontaneous play activities. Thus Symbolic Representation is an important cognitive process on theoretical grounds and its manifestation in children's play provides a potentially rich body of data for research.

Involvement is the ability to focus attention on a specific activity and to become absorbed in it. It is important because it affects the child's ability to learn (Kagan, 1966), and to remember (Ellis, 1965). A child who is too easily distracted by external or internal stimuli is likely to have more difficulty in learning than one who is not, other things being equal.

For children, particularly of preschool age, involvement may depend to a great extent on the child's interest in the activity, and this, in turn, may be affected by whether the activity is his own choice or has been imposed on him by someone else.

Language is also developing during the period when children first engage in symbolic play (usually during their second year). In symbolic play, the child determines the meaning of the symbols (objects and actions) which is why, as Piaget (1962) points out, symbolic play is the form of thinking perfectly suited to young children. Language, on the other hand, is a socialized symbol-system, i.e., the meaning of the symbols (words) is given and socially agreed upon. When children first begin to use words, they often use them egocentrically, attributing their own meanings to them, making one or two words stand for a whole sentence or phrase, or making up their own words. As they get older, they develop a greater capacity for using language and language becomes an increasingly important part of the play, particularly when children play together.

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[1] We were concerned only with conscious symbolism. There is a large, literature, mainly psychoanalytic, on the meaning of unconscious symbolism in play (A. Freud, 1965; Erikson, 1963, among others).

We were not concerned with the linguistic structure of language in children's play but rather in the functions of language in symbolic play and in the extent to which children use language as a communicative tool. Piaget (1967) points out that "Language enables the subject to describe his actions. It allows him both to reconstitute the past...and to anticipate future, not yet executed, actions to the point where sometimes actions are replaced by words and are never actually performed" (p. 22). When a child verbalizes what he is going to play before he plays it, he is future-oriented, able to imagine what he is going to do before he does it. The greater the detail in planning, the greater is his capacity to differentiate and to imagine in advance what he will do. Because of this connection between language and thought, the various functions that language performs in symbolic play were expected to provide clues to the child's cognitive level.

Once the above three major areas of study had been identified, they were broken down into categories and subcategories for purposes of analysis. During this process, it became clear that explicit definitions of all the terms we used to describe or categorize symbolic play were essential. Terms in common use were defined (e.g., accessories or onomatopoetic sounds) as well as those that particularly pertain to children's play (e.g., parallel play). When a word or phrase commonly used to describe children's play invited ambiguity (e.g., "social play" which is often used by teachers and researchers to designate play in which more than one child participates), we substituted another, unambiguous term (in this case "group play"). In addition, when a conventional term describing a behavior seemed to distort the meaning of what was actually taking place (e.g., role-playing or role), or when no term was available, we made up words which we could then define unambiguously. Definitions of all terms are contained in the Glossary.

A general situational category of play which cuts across all the data, Individual or Group play, is defined as follows:

Individual Play. The child plays alone having no interaction with other children in relation to the symbolic play.

Group Play. Two or more children play together; there is interaction between the child being observed and one or more children in relation to the symbolic play.

The remainder of this chapter details the categories and subcategories subsumed under each of the three main areas of the study--that is, for Symbolic Representation, Involvement, and Language.

Symbolic Representation

All play units are categorized according to type of play and all symbolic objects (real or imaginary) according to type of signifier as follows:

A. Type of Play

Obsig play -- play in which the child makes an object act as if it were an (absent) object, animal, person, etc. The obsig is what is signified.

Persig play -- play in which the child acts as if s/he were an (absent) object, animal, person, etc. The persig is what is signified.

B. Type of signifier

The following categories refer to the degree of distance between the signifier and the signified with respect to perceptual, functional and class relationships.

Representative -- a more or less exact replica of the signified, e.g., a toy car with many details of a real car

Semi-representative -- resembles the signified in form (a closet represents a radio), or is a member of the same class (an elephant represents a wild animal)

Non-representative -- little or no objective resemblance to the signified (a block signifies a baby). There is no functional or other relationship.

Imaginary -- an imagined object, person, etc., of which we become aware because of the child's actions or words.

The remaining three categories represent the major lines of expected change during the preschool years. They are: clarity of symbolic meaning, complexity, and organization of play. A total of 17 subcategories is subsumed under these main categories.

C. Clarity of Symbolic Meaning of Play

1. The general content of the play is clear or unclear. (This refers to the coder's ability to understand what the play is about.)

   If the general content is coded clear, the three following subcategories are used to indicate the kinds of evidence on which the coder based her/his judgment of clarity:

   a. The child's actions primarily; persig language and verbal dialogue may be included (e.g., the child makes driving motions as if turning the steering wheel of a car, then stops and says, "Fill 'er up").

   b. The child's verbalization about the play (e.g., "I'm driving a bus.").

   c. Actions and verbalization about the play (e.g., the child moves a car on a "road" made of blocks as s/he says to another child, "The car is going in the garage.").

D. Complexity of Play

This refers to the amount and kinds of differentiation and elaboration of the play. The subcategories of Complexity are as follows:

1. Specificity of persig.

   This measures the degree of specificity of the persig. For example, the highest rating is given if it is clear to the coder that the child represents a mother; the next highest, that s/he is a parent; and the lowest, that s/he is a human being.

2. Emotional stance or quality of play relationship.

   This refers to the expression by the child, through actions, language or facial expression, of an emotional quality (e.g., nurturance, bossiness, aggressiveness) in relation to a symbolic object (e.g., a doll) or to another participant during persig play.

3. Use of persig language.[1]

   Persig language is language spoken by the child as signifier (e.g., "All aboard" when the child is a conductor on a train).

4. Persig differentiation.

   This is applicable only to group play. Indicators for degree of differentiation are: (1) whether the child and one or more other children are different persigs; and (2) the clarity of the child's understanding of the relationship between the persigs.

5. Use of accessories.

   Dress-up clothes (hat, shoes, etc., appropriate for adults or clothing appropriate for specific work roles, e.g., fireman's hat), as well as other objects used in play which are not symbolic (e.g., real pots and cooking utensils).

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[1] Because verbal dialogue and persig language are an integral part of the symbolism of play, they are included in Symbolic Representation rather than Language.

6. Use of "verbal dialogue"[1]

"Verbal dialogue" denotes the language used by a child when s/he is talking to or for a symbolic object (e.g., for a small figure of a man or woman).

7. Number of different symbolic actions

A symbolic action is one which the child takes when s/he is making an object act as if it were another object, person or animal (e.g., moving a block in the air as if it were an airplane), or when s/he acts as if s/he were another person, animal or object (e.g., feeding a doll as a mother). Only different, i.e., not repeated actions, are counted.

8. Repetitiveness of play

This measures the degree to which the child repeats the same symbolic action(s).

9. Use of onomatopoetic sounds

Onomatopoetic sounds are those made by a child in imitation of the sound of animals (e.g., "meow"), motors, sirens, etc.

10. Number of different signifiers

This includes objects used as signifiers as well as imaginary signifiers. "Different" refers to differentiation by the child through actions or words. For example, if a child uses several miniature cars of different kinds (police car, taxi, etc.) in the same way, i.e., as motor vehicles, they are counted as one different signifier; if s/he differentiates between them through actions (e.g., a siren for a police car) or through words (e.g., "The taxi is stopping at the red light"), they are considered "different."

E. Organization of Play

There are three subcategories--coherence, sequentiality and lability.

1. Coherence

This measures the degree to which the various components of the play are related to the central content.

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[1] Because verbal dialogue and persig language are an integral part of the symbolism of play, they are included in Symbolic Representation rather than Language.

2. Sequentiality

The criterion for sequentiality is the presence within a play unit of a succession of scenes which are related to each other in terms of basic content, e.g., a child in the house corner feeds the baby (doll) and irons; in the second scene, s/he "goes to work" with friends; then s/he returns to the house corner, sends another child for diapers for the baby, diapers the baby and sings it to sleep. Each of these scenes might contain one or more different symbolic actions.

3. Lability (labile/stable)

Play is considered labile if there are changes in the specific content of the play or the persig(s), without verbalization or changes in materials (e.g., the children decide to play "store," get necessary materials for the store, and then engage in family play as husband and wife).

Involvement

This aspect of play consists of three related categories. There are no subcategories.

A. Length of Play Unit

The number of minutes during which a child stays with a specific play content even though s/he may interrupt it one or more times in response to external or internal stimuli.

B. Proportion of Time Devoted to Symbolic Play During a Play Unit

The proportion of the total play unit devoted to symbolic play alone. This category is considered a measure of distractibility, and is rated on a 3-point scale.

C. Intensity of Absorption in Symbolic Play

This measures the degree of the child's concentration in her/his symbolic play. The rating is based on a number of cues, e.g., the number of self-initiated interruptions, lack of response to external interruptions.

Language

Language contains two groups of categories. One has to do with the functions of language in the symbolic play, and the other with the type of communication. There are five functional categories and three types of communication. There is also a single category--amount of verbalization.

A. Functional Categories

1. Planning of play.

   Planning, as used here, means verbal articulation (implying mental formulation) of a specific detail of the play before the action is taken (e.g., one child says to another in the house corner, "Let's cook"; or, "You be the mommy and I'll be the daddy").

2. Substitute for action.

   Here the child talks about an action which never takes place (e.g., "Let's pretend I already baked the cake").

3. Labeling or simple description of play

   The child may describe her/his actions, or label her/his persig or a symbolic object (e.g., when s/he is a signifier, as "cook" s/he says, "I'm baking a cake," or when s/he is not a signifier, "The car is going into the garage").

4. Giving information about or explanation of various components of the play.

   Giving information involves more than just labeling (e.g., during shark play, a child may say, "Sharks eat people." An example of an explanation--a child who is moving a little car up to a gas pump says, "The car must go to the garage because it needs gas").

5. Other language functions.

   A number of functions are included here, e.g., expressing a wish or a need for a symbolic object; expressing approval, disapproval, agreement; telling other participants what to do.

B. Type of Communication

1. Monologue.

   The child talks to her/himself as though s/he were thinking aloud.

2. Collective monologue

   The child talks to her/himself in front of others but is not really interested in communicating with them nor does s/he expect them to respond.

3. Socialized communication

   The child talks with the intention of communicating with another person.

C. Amount of Verbalization

The total number of statements made by a child during a play unit.

VI. DATA ANALYSIS PROCEDURES

Unit of Analysis

As indicated previously, any observation record includes all the child's play in a given play period and, therefore, both symbolic and non-symbolic play. Thus, the first step is to differentiate the play units, which contain symbolic play, from the child's other activities during the play period. The play unit, which is the unit of analysis, is defined as a symbolic play episode in which the specific content remains the same throughout, despite interruptions, internal or external. Thus it may contain non-symbolic as well as symbolic content. If there are two or more play units during a play period, they must be differentiated from each other. The criterion for this is difference in specific content. For example, if a child is playing fireman and then takes off her/his fireman's hat, moves over to the housekeeping corner, puts on a man's jacket and hat and plays with the dolls, feeding them and putting them to sleep, the fireman play constitutes one unit and the doll play another.

Basic Measures

Once the play unit has been identified, the categories and subcategories of analysis for each major dimension (see Chapter V) are applied to the raw data. Overall, this involves three kinds of operations:

1. Noting the presence or absence of certain behaviors, e.g., the use of accessories, onomatopoetic sounds;
2. Recording the frequency of certain behaviors, e.g., the number of different symbolic actions, or, for Language, the number of statements made by the child;

3. Rating on the basis of qualitative judgments, e.g., persig differentiation, or on the basis of quantitative data, e.g., proportion of time devoted to symbolic play during a play unit.[1]

Weighted Units

As stated previously, data for analysis were limited to a maximum of four units per child. This lessened, but did not eliminate the uneven distribution of units because of the high proportion of children (65%) with fewer than four units (see Table VI-1).

Table VI-1

Children with One to Four Sample Units

	Threes		Fours		Fives		
Number of Units	Middle Class	Lower Class	Middle Class	Lower Class	Middle Class	Total #	Total %
1	0	1	0	0	2	3	5
2	1	3	4	1	2	11	18
3	5	4	3	8	5	25	42
4	6	4	5	3	3	21	35
Total	12	12	12	12	12	60	100

A weighting system was therefore devised in which each unit was weighted inversely according to the number of units for a given child. If a child had only one unit of symbolic play in a specific category, a weight of 12 was given to that unit; if two units, a weight of 6 to each unit; if three units, a weight of 4 to each; and if four units, a weight of 3 to each. Thus, for example, a child with one unit who used onomatopoetic sounds in that unit was given a score of 12. A child with four units who used onomatopoetic sounds in all units also was given a score of 12. In this way, a child with four units does not account for a larger percentage of a total score than does a child with fewer than four units.

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[1] See Manual of Procedures, Appendix A, for detailed description of analytic procedures.

All the Symbolic Representation, Involvement and Functional Language categories were weighted for the group play units since these constituted the major data used for analysis of developmental trends and for comparison of middle-class and lower-class children. The individual play units were not weighted and, consequently, unweighted units are used in the comparison of group and individual play.

It should be pointed out that, whether the units are weighted or unweighted, there are variations in the Ns (number of play units) at different age levels and for different categories, for a number of reasons. If a category applies to all play (both obsig and persig), the N will be larger than for a category which applies only to persig play. For example, the N at age 3 for number of different symbolic actions is larger than the N for emotional stance because it applies to all play while emotional stance applies only to persig play. When the figures for both social class groups are combined, the N for the Fives is always smaller than the N for the Threes and Fours because of the absence of a lower-class sample. In other cases, the N is lower for a category because there are special requirements, such as, that the play last two minutes or longer (for two Involvement categories) or that there be at least two different symbolic actions (for coherence) or that the meaning of the play must be coded clear (for specificity of persig).

There are three categories in which the N is not the sum of the units (weighted or unweighted). They are: type of signifier (N equals the total number of different signifiers used by each age level group); type of communication and amount of verbalization (N equals the total number of statements made by the children in each age level group).

VII. RESULTS

The results are presented in three sections: developmental trends; comparison of the play of three- and four-year-old lower-class and middle-class children; and comparison of individual and group play. The most important, for methodological reasons, are the developmental trends in children's symbolic play since these will provide possible cues for assessing children's cognitive level from their symbolic play, and direction for future research.

A. Developmental Trends in Group Play

We defined a developmental trend as an increase or decrease in the incidence of a play behavior when it occurs in both socioeconomic groups (from age 3 to 5 in the middle-class group, and from age 3 to 4 in the lower-class group). Categories in which there is little or no change from age 3 to 4 or from 4 to 5 are included. Since the trend in all cases is the same in both socioeconomic groups from age 3 to 4, we combined the scores.

Developmental trends for the two groups are presented for group play only.[1] The sharp decline in individual play at age 4 and 5 and the absence of a lower-class five-year-old sample made an analysis of trends in individual play impractical.

The decline in individual play, accompanied by an increase in group play, constitutes a developmental trend in itself. Table VII-1 shows the sharp decrease in individual play from age 3 to age 4 (from 53% to 29%) and a leveling off at age 5 to 21%, and concomitant increases in group play (from 47% to 71% to 79%).

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[1] Except for type of signifier which was coded for group and individual play combined. (See Table VII-2, p. 42).

Table VII-1

Developmental Trends: Individual and Group Play

Play Category	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
	N	#	%	N	#	%	N	#	%
Individual play[a]	288	153	53	288	83	29	144	31	21
Group play		135	47		205	71		113	79

Note. See Chapter VI, pp.40-41, for explanation of weighting.

[a] Because there was so little, parallel play was combined with individual play. See Glossary for definition.

Symbolic Representation

There are developmental trends in six subcategories of Symbolic Representation, and two of the three major categories--complexity, and coherence and organization of play--are represented.

Although they constitute less than half the total number of signifiers used at all age levels, there is a slight upward trend in the use of less representative signifiers, that is, the use of semi-representative, non-representative and imaginary signifiers combined increases with increasing age (31% at age 3, 37% at age 4 and 41% at age 5) (See Table VII-2).

Table VII-2

Developmental Trends: Type of Signifier Used During Symbolic Play (Group and Individual)

Play Category	Threes			Fours			Fives		
	N	#	%	N	#	%	N	#	%
	245[a]			282[a]			112[a]		
Representative signifiers		155	63		149	53		62	55
Semi-, non-representative & imaginary signifiers		76	31		105	37		45	41

Note. The percentages do not total 100% because the small percentages of ambiguous signifiers are omitted from the Table.

[a] N=number of *different* signifiers.

Two of the four complexity[1] subcategories in which a trend appears--emotional stance and persig differentiation--apply to persig play alone. The ability to express overtly the feelings of the signified (a person or animal) through words, actions, facial expression, etc., or to behave in such a way that the quality of the relationship with another participant (e.g., driver and passenger) or with a symbolic object (e.g., mother and doll/baby) is conveyed to the observer obviously involves the capacity to differentiate since the person or animal signified becomes more individual, and different from other "drivers" or "mothers." There is a sizable increase in behavior manifesting emotional stance from age 3 to age 4 (from 13% to 41%) and virtually no increase at age 5 (45%) (see Table VII-3).

The developmental trend in persig differentiation is more clearcut. Persig differentiation is present when two or more children (one of whom is the focus of the observation) are clearly different persigs (e.g., husband and wife) who perform different actions, and who do not merely verbalize who they are. This category, like emotional stance, is a measure of the capacity to differentiate and, to some extent, to accommodate to objective reality. It has two subcategories: (1) The child seems to understand the nature of the persig of one or more other participants in the play and of the relationship between himself and the other(s). (2) There is persig differentiation but the child seems unaware of or confused about the (play) relationship between himself and the other(s). There is a consistent increase from age 3 to age 4 to age 5 in subcategory (1)--from 16% to 48% to 64%--and a consistent decrease in units categorized as (2) and in those with no persig differentiation (see Table VII-3).

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[1] See pp. 33-34.

The two other complexity categories--number of different symbolic actions and use of onomatopoetic sounds--apply both to obsig and persig play. The definition of "different" for number of different symbolic actions is stringent. For an action to be counted, there must be clear evidence that it is symbolic and also that it is different from any other action the child performed during the play episode. There is a small but consistent increase in units with four or more different symbolic actions (from 41% at age 3 to 53% at 4 to 59% at 5). For units with eight or more different symbolic actions, there is a large increase from age 3 to 4 (10% and 29% respectively) and virtually none from age 4 to 5 (to 31%) (see Table VII-3).

The use of onomatopoetic sounds is coded for presence-absence. There is a considerable increase from age 3 to 4 (31% and 49% respectively) but none at age 5 (50%) (see Table VII-3).

Table VII-3

Developmental Trends:
Complexity Categories

	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
Play Category	N	#	%	N	#	%	N	#	%
Emotional Stance	204	26	13	264	107	41	84	38	45
Persig Differentiation	192			230			84		
(1)		30	16		111	48		54	64
(2)		52	27		30	13		0	0
No		110	57		89	39		30	36
# Different symbolic actions	216			276			144		
1-3		128	59		130	47		60	42
4+		88	41		146	53		84	59
8+		20	10		80	29		44	31
Use of onomatopoetic sounds	216	66	31	276	132	49	144	72	50

Note. N=total number of weighted units applicable to each play category.

That there is a growing capacity for organization is indicated by the increase in sequential play. For play to be considered sequential there must be a succession of "scenes" which are related to each other in their basic content. For example, in family-house play, one "scene" may consist of the "mother" feeding and dressing the "baby"; a second, of taking the baby to the park and talking to other "mothers" there; a third, of taking the "baby" to the laundromat to wash clothes. Sequential play increases steadily from 26% at age 3 to 38% at age 4 to 59% at age 5 (see Table VII-4)

Table VII-4

Developmental Trends:
Sequential Play

Play Category	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
	N	#	%	N	#	%	N	#	%
Sequential Play	164	42	26	230	88	38	112	66	59

Involvement

Length of play unit, one of the three Involvement categories, is our measure of attention span. There is a clear increase from age 3 to age 5 in units lasting 21 minutes or longer[1] (23%, 37% and 42% respectively) (see Table VII-5).

Table VII-5

Developmental Trends:
Length of Play Unit

Play Category	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
	N	#	%	N	#	%	N	#	%
	216			276			144		
5' or less		80	37		38	14		28	19
6'-20'		86	40		137	49		56	39
21'+		50	23		101	37		60	42

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[1] The range is from 21 minutes to 45 minutes at age 3; from 25 minutes to 69 minutes at age 4; and from 23 minutes to 61 minutes at age 5.

Language

For the analysis of language, two measures were used: presence/absence in each play unit; and the number of verbal statements made by all children in the groups (including ambiguous and unintelligible statements). Where the number of statements is used as a measure, combining the social class groups by age would have distorted the age-level relationship because of the absence of a lower-class Fives group. Therefore, the total number of statements is given separately for the lower-class and middle-class groups.

There is a clear increase from age 3 to age 5 in the middle-class group (175, 231, and 380 respectively) and in the lower-class group from age 3 to 4 (121 and 337 respectively) in the total number of statements. The average number of statements per child also shows a clear trend in both socioeconomic groups (see Table VII-6).

Tablo VII-6

Developmental Trends:
Amount of Verbalization

Play Category	Middle-Class Children			Lower-Class Children	
	Threes	Fours	Fives	Threes	Fours
Total # of statements	175	231	380	121	339
Average # of statements per child	19	21	32	13	28

Using presence in a play unit as the measure, there appear to be developmental trends in two of the five functional Language categories. Labeling or simple description of aspects of the play shows no increase from age 3 to 4 (71% at both age levels), but a very sharp upward trend from age 4 to 5 (96% at age 5). Giving information about or explanation of aspects of the play also shows virtually no increase from age 3 to 4 (25% and 29% respectively) but doubles at age 5 (to 60%). Although the latter figures are impressive, it should be mentioned that they represent a very small absolute number of statements of this kind (See Table VII-7).

Table VII-7

Developmental Trends: Functional Language Categories

	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
Play Category	N	#	%	N	#	%	N	#	%
	216			276			144		
Labeling or simple description		154	71		195	71		92	96
Giving information, explanation		54	25		81	29		86	60

Reversal of Developmental Trends

In a number of categories we found an increase or decrease from age 3 to 4 in both socioeconomic groups followed by a reversal in direction at age 5. Because of the absence of a lower-class Fives sample we could not determine whether the reversal was developmental, a characteristic of middle-class Fives, or of this particular sample of Fives. Other data (to be discussed later) suggest, however, that the reversal of trends may be developmental. In addition, these findings have implications for an understanding of five-year-olds. They are therefore included here.

At age 3 and 4, a very high proportion of group play consists of persig play (84% of the play at age 3 and 93% at age 4). At age 5, the proportion of persig play drops dramatically to slightly more than half (56%) (see Table VII-8).

Table VII-8

Reversal of Trend at Age Five: Type of Play

	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
Play Category	N	#	%	N	#	%	N	#	%
	216			276			144		
Obsig play		34	16		19	7		64	44
Persig play		182	84		257	93		80	56

In two other Symbolic Representation categories--specificity of persig and repetitiveness of play--there are also reversals of trends. High specificity of persig represents the highest degree of differentiation with respect to such things as family position, species of animal, work role (e.g., to signify a bus driver through actions, persig language, etc., requires a greater capacity for differentiation than to signify a driver of an unspecified vehicle). At age 4 there is considerably more high specificity than at age 3 (57% as compared with 39%). At age 5, however, there is a decline to 48%. Similarly, an increase in repetitiveness of play (medium and high) is seen from age 3 to 4 (from 55% to 67%) and a decrease at age 5 (to 44%) (see Table VII-9).

Table VII-9

Reversal of Trend at Age Five:
Specificity of Persig and Repetitiveness

Play Category	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
	N	#	%	N	#	%	N	#	%
Specificity of Persig:	194			240			84		
High		76	39		136	57		40	48
Medium		64	33		70	29		32	38
Low		54	28		34	14		12	14
Repetitiveness:	216			276			144		
Low		98	45		91	33		80	56
Medium & High		118	55		185	67		64	44

Note. N=total number of weighted units applicable to each play category.

The same pattern is present in two Involvement categories--proportion of the play unit devoted to symbolic play and intensity of absorption in play, both in relation to the length of the play unit (see Table VII-10). From age 3 to 4 there is an increase in the percentage of units, lasting 6 minutes to 20 minutes, in which a high proportion of the unit is devoted to symbolic play (from 40% to 66%) and a decrease at age 5 to 41%. If all play units lasting more than 6 minutes are considered, there is an increase from age 3 to 4 (from 58%

to 91%) and a decrease at age 5 to 59%. Similarly, for high intensity of absorption in play, in units lasting 6 minutes to 20 minutes, there is an increase from age 3 to 4 (45% and 56% respectively) and a decrease at age 5 (39%). In units lasting 6 minutes or longer, the figures are 64% at age 3, 91% at age 4 and 72% at age 5. Thus, there is a decrease in distractibility, considered both quantitatively and qualitatively, from age 3 to 4 and an increase from age 4 to 5.

Table VII-10

Reversal of Trend at Age Five: Involvement

	Number and Percent of Weighted Units								
	Threes			Fours			Fives		
Play Category	N	#	%	N	#	%	N	#	%
High proportion of unit devoted to symbolic play in units lasting:	154			151			64		
2'-5'		64	42		14	9		26	41
6'-20'		62	40		100	66		26	41
21'+		28	18		37	25		12	18
High intensity of absorption in units lasting:	150			148			92		
2'-5'		54	36		14	9		26	28
6'-20'		68	45		83	56		36	39
21'+		28	19		51	35		30	33

Note. N=total number of weighted units applicable to each play category.

Summary

Thirty categories of play behavior were used for the analysis of the symbolic play of our sample.[1] We found clear trends from age 3 to age 5 in eleven of these categories. We also found reversals of trends at age 5 in five categories, which we think may constitute nonlinear developmental trends.

There are no apparent trends in six Symbolic Representation categories (the three subcategories of clarity of symbolic meaning denoting the evidence on which the play was judged clear, persig language, use of accessories and number of different signifiers) and in one Language category (type of communication). With respect to type of communication it should be noted that, at all ages, more than four-fifths of the play-related statements were categorized as socialized communication, i.e., directed at another person. The remaining seven categories proved useless for a variety of reasons.[1] In the rest of this report, therefore, consideration will be given only to the 23 viable categories.

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[1] These are listed and defined in Chapter V, pp.32-36.

Discussion

Our expectations concerning developmental change in this study were general, and could not be appropriately applied, for the most part, to individual categories. The two developmental studies which were available when our study was designed (Markey, 1935 and Lunzer, 1959) were too different in conception and approach to be useful in defining our expectations. But Piaget's formulation of the changes that take place in symbolic play during the period from four to seven[2] contributed largely to our expectations regarding Symbolic Representation: that, during the period from 3 to 6, children would become less egocentric and the meaning of their play, therefore, would become clearer to the observer; that the play would become more differentiated in a variety of ways and also more coherent and better organized. Some specific expectations regarding other, non-symbolic aspects of play were that group play would increase and individual play decrease; that attention span would lengthen, that the amount of verbalization would increase and that language would become more socialized.

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[1] Three categories--coherence, lability of play and clarity of symbolic meaning (clear or unclear)--do not differentiate during the age period studied. This lack of differentiation may be due to the way in which they were defined, or, for lability, the way in which the play unit was defined. Verbal dialogue and substitution of language for action occurred very seldom at all age levels. Two functional Language categories--planning of play and other language functions--covered too wide a spectrum to be meaningful.

[2] See pages 4-5.

Our expectations were fulfilled, in part. We found that the play became more differentiated in several ways, that there was an increase in sequential play, indicating a greater capacity for organization; that group play increased as did attention span and amount of verbalization. Our analysis of the play of three-, four- and five-year-olds enables us now to be much more specific about the developmental changes in symbolic play and to make some inferences about what they mean in relation to children's development during this period.

The increase in group play, with its concomitant decrease in individual play, reflects not only children's increasing desire to play with other children, but also their increasing capacity to give up being the sole determiner of what will happen in their play, to give up the satisfactions of not having to compromise or share for the satisfactions to be gained from playing with others.

Halfar's (1970) finding that there is a significant upward trend in the proportion of play involving interaction between two or more players and a corresponding downward trend in "dramatic play" (our individual play) among middle-class white children during approximately the same age period supports this finding. It is particularly interesting to find that the percentages of group symbolic play at each age level are very similar to those of our middle-class groups. Lunzer (1959) also found a clear trend in "cooperation," a nine-point scale including solitary, parallel and cooperative group play. Because his scale also included non-play social interaction as well as play interaction, it is not as relevant as Halfar's.

The presence of only a very slight increase in the use of less representative signifiers probably reflects a reality factor as well as a trend in children's development. The presence in all preschool classrooms of a plethora of toy replicas which are attractive to Threes as well as to older children probably accounts for the greater use of representative signifiers at all age levels and acts as a counterforce to the developmental trend. That the increase in the use of less representative signifiers is so slight may also be due to a difference in the underlying cognitive-affective meaning of the child's behavior when s/he uses less representative signifiers at age three (and earlier ages) and at age five (and later ages). At earlier ages, the child's relative inability to distinguish reality from fantasy and her/his use of symbolic play primarily to satisfy her/his ego needs affects her/his choice of signifiers. Thus, the child's use of a rag to signify a baby does not mean that s/he perceives the rag as a baby with head, body, arms and legs or that s/he is cognizant that rags and babies are both soft (though this may be part of the experiential-emotional tie between them), but just that s/he needs it to be a baby and, therefore, it is. If, however, a five- or six-year-old needs an object to represent a baby in her/his play, and there is none around, s/he might use a rag for convenience's sake, knowing, because s/he has a mental image of a baby, that it is not a baby and does not resemble a baby in any way. The child's increasing capacity to see similarities, i.e., to abstract, may also be a factor in the increasing use of signifiers which resemble the signified in form or function, that is, semi-representative signifiers (a pot is a hat; a battery, a radio).

If our population had included one-and-a-half- to two-year-olds as well as six-year-olds, perhaps we would have found a nonlinear trend because of this difference in the meaning of behavior at different ages--a high proportion of non-representative signifiers at the early ages, a decrease at age four, and an increase at ages five and six.

Halfar (1970) who used categories similar to our "representative" and imaginary" signifiers, had quite different results. Her oldest group used representative signifiers considerably more than the two younger groups. While, in our sample, imaginary signifiers constituted a negligible percentage of signifiers at all age levels and there was no trend, she found a decrease in imaginary signifiers (her "undefined objects") from the youngest to the oldest group. These contradictory findings may stem in part from different ways of categorizing the data.

The upward trends in emotional stance, persig differentiation, use of onomatopoetic sounds and number of different symbolic actions taken together are an indication of an increasing capacity to differentiate and, therefore, to elaborate the play in a variety of ways. Singly, some suggest other signs of cognitive growth. For example, although it is primarily the child's feelings and needs that are being expressed through the emotional stance of the persig, the child's awareness and knowledge of what people (or animals) feel, the ways in which they behave and the kinds of things they do are also being expressed (in Piagetian terms, accommodation to reality as well as assimilation is present). Thus, when a child, as a loving, nurturing "mother" gives the "baby" a bottle, tenderly changes its diaper, sings a lullaby when putting it to bed, it is evident that s/he knows the kinds of things a mother does for a baby and is aware (through imitation, identification or need) of the feelings connected with these acts and this relationship. What is more, to elaborate in this particular way is perhaps the beginning of the capacity to take another's viewpoint, a step away from egocentrism. Similarly, persig differentiation (1) involves not only differentiation but also accommodation to reality in that there must be evidence that the child knows, for example, some of the things that doctors do, and (for the purposes of this study) can perform such acts realistically enough so that they can be recognized as such. In addition, for the two or more participating children there must be, to some extent, a mutually understood reality, objective or psychic.

Markey's (1935) category, "original items of overt imaginative behavior and language," was considered an index of "versatility" in imaginative behavior. It included behavior and language used by a child which was not repetitious of the child's own or of another child's. Although her measure is more comprehensive than ours, the non-repetition of symbolic actions included in her category is similar to our category--number of different symbolic actions. Her finding of an increasing trend with age thus supports ours to some extent.

Halfar (1970) found a clear upward trend in "quality of elaboration of play theme," which seems to be a combination of three characteristics: number of symbolic actions, length of play episode and number of participants in the play. Although we do not have a composite category including these specific characteristics, we found a clear upward trend in two of the three categories which are similar to hers (length of play unit and number of different symbolic actions).

Children are more likely to use onomotapoetic sounds in some kinds of play than in others. For example, driving a car is likely to be accompanied by motor or horn noises, and cat play by meows, while serving food or going to sleep would not. We cannot, therefore, be sure that the increase in use of onomatopoetic sounds per se is indicative of a developmental trend since it may be correlated with content. It is possible, however, that a more differentiated version of this category--with respect to quantity, content or other characteristics--would clarify its function and meaning as well as its status as a developmental indicator.

The considerable increase in sequential play indicates a growing capacity for organization and, therefore, an increasingly higher degree of mental organization. Lunzer (1959) found a clear developmental trend from age 2½ to 6 in "organization of behavior." This is a composite of two scales covering several elements only one of which is the degree of coherence of the play. Although it does not resemble our "sequentiality" category, the requisite underlying mental organization may be similar.

Piaget (1962) presents a broader view of sequentiality. He points out that there is a reciprocal relationship between coherence of thought and socialization, that progress in one is affected by progress in the other. In this context, "coherence of thought" is equivalent to our "sequentiality" category, and socialization, to "collective symbolism," our "persig differentiation (1)." He adds, "It is clear that they are two aspects of the same development, and it is interesting to find this interaction of social and mental acquisitions in the field of ludic symbolism" (i.e., symbolic play) "in addition to finding it continually in that of adapted representation" (p. 139).

The small but consistent increase in the percentage of play units lasting 21 minutes or longer suggests a growing capacity to attend. This capacity is dependent on many factors such as the content of the activity, who initiates it, motivation for engaging in the activity, the comfort of the child in a situation, familiarity of place, activity or adults involved. Kagan points out that "sustained attention for minutes...requires the possession of structures or chains of cognitive units....Sustained involvement of any child is dependent on that child's previous acquisition of a set of hypotheses and reactions appropriate to the object" (1968, p. 82). Our findings suggest that, when given the opportunity, the preschool child can be deeply involved in symbolic play for long periods of time, despite interruptions.

Markey (1935) found some indication of an upward trend with increasing age in the duration of symbolic play episodes; Lunzer's (1959) findings were inconsistent; and Halfar (1970) found no clear trend. These differing results may be due to differences in definitions of the play unit. Also, our observations covered the entire indoor play period and were not restricted to 15-minute (Halfar and Markey) or 30-minute (Lunzer) time-samples.

The increase in the amount of verbalization from age 3 to 5 was expected. In none of the other studies was this investigated.

Before discussing in general the meaning of the reversal of trends in five play categories at age 5, we shall discuss one--the dramatic increase in obsig play and the concomitant decrease in persig play--for its theoretical interest.

Halfar's (1970) is the only other systematic developmental study in which this differentiation of type of play is made. She did not, however, check for a developmental trend with respect to type of play, but only for sex differences. She found clear differences between boys and girls in "role play" (persig play) and "toy play" (obsig play).[1] In her study, the boys engaged in obsig play more than the girls at both age levels (3:4-5:0 and 5:2-6:3). The difference between them, however, is smaller at the older age level because of the decrease in obsig play among the boys and the increase among the girls.

Although we did not investigate sex differences in general, we checked for sex differences in this category qnd found a very sharp difference between the middle-class five-year-old boys and girls in this respect (but not at age three and four). Almost all the boys' play was obsig play and almost all the girls' persig. It is the boy's play, therefore, that accounts for the sharp increase in obsig play.[1] Halfar suggests not only that the sex difference may indicate boys' greater interest in things and girls' in people, even at this early age, but also that it may be responsible for the greater complexity she found in the play of the girls compared to that of the boys. We did not compare girls and boys with respect to complexity. It is relevant here, however, that more of our Complexity categories refer to persig than to obsig play, suggesting that persig play may be more conducive to elaboration than obsig play, and, perhaps, that the girls' play may be more complex than the boys'.

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[1] Her sample consists of middle-class children only.

On the other hand, the use of an object instead of the self as the major symbol may be evidence of a psychological need (on the part of the boys) to put a greater distance between the self and the signifier. If so, does this distance, as Gould states, foreshadow "later intrapsychic achievement forms" (1972, p. 86)? Gould suggests that the ability to move from fantasy which the child verbalizes as her/himself (e.g., "I'm the Mommy.") to play in which s/he enacts her/his fantasies as someone or something else, is an advance in cognitive and affective development. We wonder whether enactment of fantasies through a symbolic object, during group play, is a further advance.[2] Without intensive study of the play of individual children it is impossible to determine the meaning of this change and why it occurs in the play of boys only. We would also want to know what happens at age 6 and 7, and among lower-class children.

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[1] Since Halfar's sample and our Fives sample consist only of middle-class children, we do not know whether this sex difference occurs also among lower-class children.

[2] This possibility is supported by our observation of what appears to be a transitional form of play in which a child signifies the same person or animal as does a symbolic object--either simultaneously or alternately (e.g., both the child and a small figure of a person represents the same fireman)--and talks when s/he is the signifier (persig language) as well as for the symbolic object which the fireman figure represents (verbal dialogue). This seems to us to be somewhat more differentiated in terms of distancing than simple obsig or persig play and allows for more acting out of anxiety-producing actions, with a built-in escape route through the symbolic object when the anxiety level becomes too high. We called this persig/obsig play. It occurred only in superhuman/magical play in our sample and was, therefore, excluded.

The meaning of the reversal of trends at age 5 in five categories of play behavior cannot be determined from our data alone, as we indicated previously. We have, however, supportive data and enough evidence from other sources to allow us to speculate.

In six of the eleven play categories in which there appear to be developmental trends, the rate of change is considerably greater from age 3 to age 4 than from age 4 to 5. The direction of change in all six categories signifies a higher level of cognitive functioning. A continuation of the trend in three of the five categories in which there is a reversal at age 5 would also have implied greater cognitive maturity--greater differentiation, less distractibility and deeper intensity of involvement; in one, less maturity--increasing repetitiveness of play. (With regard to the fifth, obsig and persig play, our speculations have not helped us arrive at any conclusions.) The reversal, therefore, implies a decrease in maturity in three and an increase in one. Thus the decrease in the rate of change together with three of the reversals suggest a slowing down at age 5, a shifting of gears possibly preceding organization on a higher level. At the same time, the increase in the amount of verbalization in general and in the use of language for describing and for explaining or giving information about aspects of the play at age 5 may be indicative of a higher level of verbal ability, while the increase in sequential play is evidence of a greater capacity to organize the content of the play. Together they suggest a change in the mode of intellectual functioning.

White (1966) points out that "the American S-R psychologists, the Russian theorists, Luria and Vigotsky, and Piaget have all examined cognitive development using markedly different procedures. Each has concluded, on the basis of essentially independent evidence, that the emergence of what each seems to construe as symbolic or conceptual thought occurs in the age range from 5 to 7....However different the view of abstract mental processes, it is noteworthy that all agree about where in ontogenesis their influence is first found..." (p. 7). In a review of the literature covering this age period, White reports: "Contemporaneous to the 5-7 changes in learning, there are significant changes reported in the physiological, perceptual, and emotional literature and the chances seem good that these are linked to the cognitive changes not by logic ...but by bio-logic" (1968, p. 24).

Jones, in his explication of Erikson's charting of life stages, says: "Roughly between the ages of five and seven, human children show a marked reduction of interest in matters of the body and a marked increase of interest in matters of the mind. To what extent it is a response to social pressures, due to some universal societal awareness that the child is now 'educable,' and to what extent it is a response to still further maturational developments in the central nervous system is a question about which there are authoritative differences of opinion" (1972, p. 138).

I suspect that most teachers of Fives shift emphases in response to this awareness of the child's greater educability (in conventional terms) and that the children respond to this shift eagerly because of their desire to "learn" and be more grownup.[1]

It seems to me that most children would respond to these developmental changes with a diminishing interest in symbolic play (especially since most schools do not provide the opportunity for it after age 5 and parents may not encourage it) and an increasing investment in learning academic skills. Whether or not these influences are already being reflected in the play of five-year-olds we cannot know. Only a comparative study of the play of children aged 5 and older, in situations which are conducive to symbolic play and those which are not, will give us a definitive answer.

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[1] That it was more difficult for us to find classes of Fives, than of Threes and Fours, in which symbolic play was a regular part of the curriculum, in independent schools serving upper-middle-class populations, seems like supporting evidence.

B. Comparison of Play of Middle-Class and Lower-Class Children

Comparison of the children's play on the basis of social class shows that the similarities far outweigh the differences between the two groups. Similarities and differences are presented separately below and are grouped according to the three dimensions of Symbolic Representation, Involvement, and Language.

Since there were no lower-class five-year-olds, comparisons are based only on data from three- and four-year-old children.

We shall note the degree to which the social class groups resemble each other or differ; whether they become more or less alike at age 4 than they were at age 3, and whether the pattern of development (increase or decrease from age 3 to age 4) is the same or different.

Numbers are too small to test for statistical significance. Similarities and differences are thus defined arbitrarily according to the percent of occurrence of various scores. If the difference is five percent or less, the groups are considered virtually alike. A difference of six percent to 14 percent is considered slight; of 15 percent or more, large.

Similarities

There is a slight difference between the two groups in the amount of group play at both age levels--14 percent at age 3 (middle-class--54%; lower-class--40%) and 10 percent at age 4 (middle-class--76%; lower-class--66%). Thus the groups resemble each other slightly more at age 4 than at age 3. Here, the pattern of development is the same for both groups.

Symbolic Representation. At age 3, the groups are virtually alike in the percentage of persig play units (middle-class--85%; lower-class--83%), in the predominant use of representative signifiers (middle-class--64%; lower-class--61%), and in the proportion of play in which there was little repetition of symbolic actions (middle-class--48%; lower-class--43%). The groups are slightly less alike at age 4 in these respects (a difference of 10% in persig play, 6% in use of representative signifiers, and 11% in repetitiveness), but the pattern of development is the same for all.

The two groups are similar at age 3 in their expression of the emotional qualities of the persig--emotional stance (middle-class--9%; lower-class--17%)--and in the use of onomatopoetic sounds in their play (middle-class--24%; lower-class--37%). The groups are more alike, however, at age 4 than at age 3, moving from slight to virtually no differences (a difference of 3% in emotional stance; 2% in use of onomatopoetic sounds) and the pattern of development is the same.

In three other categories, the percentage differences are slight (between 6% and 11%) at both age levels and the pattern of development is the same in both groups. These three categories are as follows: (1) number of different symbolic actions; (2) play judged to be clear in meaning on the basis of the child's actions primarily; and (3) sequentiality of play. In all, the differences between the groups are virtually the same at both age levels--in the first, 7% at age 3 and 6% at age 4; in the second, 9% at age 3 and 10% at age 4; and in the third, 9% at age 3 and 11% at age 4.

Involvement. The two groups are very similar in three measures of involvement, two quantitative and one qualitative. The percentage of units lasting 21 minutes or longer is similar in the two groups at both age levels: at age 3, middle-class--26%, lower-class 20%; at age 4, middle-class--40%, lower-class--

33%. At age 3, there is virtually no difference in the percentage of units lasting six minutes or longer in which a high proportion of the unit was devoted to symbolic play (middle-class--58%; lower-class--59%) and only a slight difference at age 4 (middle-class--85%; lower-class--96%). Similarly, at age 3 there is virtually no difference between the groups in the intensity of absorption in play in units lasting six minutes or longer (middle-class--63%; lower-class--65%) and a difference of 10 percent at age 4. Thus, the groups are slightly less alike at age 4 than at age 3. The pattern of development, however, is the same in all three categories.

Language. Lower- and middle-class children are alike in the extent to which their language consists of socialized communication during group symbolic play. There is virtually no difference between the groups at age 3 (middle-class--91%; lower-class--89%) or at age 4 (middle-class--84%; lower-class--83%), and the pattern of development is the same.

The groups are also very similar in the degree to which they label various aspects of the play at age 3 (middle-class--69%; lower-class--74%) and only slightly different at age 4 (middle-class--67%; lower-class--74%). Since a difference of two percent in the middle-class figures cannot be considered as indicating a real decrease, the pattern of development for both groups also is the same.

Although at age 3 there is a difference of 14 percent in the degree to which the children give information about and explanations of their play (middle-class--37%; lower-class--13%), at age 4 the two groups are virtually identical (middle-class--30%; lower-class--29%). This change from age 3 to 4 is due to the difference in pattern of development (a decrease in the middle-class group and an increase in the lower-class group).

Differences

Symbolic Representation. Most of the large differences between the two groups are in the area of Symbolic Representation. In three Symbolic Representation categories, there are large differences at both age levels; in four, at only one age level. In five of these, there is an additional difference--in pattern of development.

The middle-class group has 28 percent more units with high specificity of persig at age 3 than the lower-class group (middle-class--53%; lower-class--25%) and 21 percent more at age 4 (middle-class--58%; lower-class--47%). Although the differences are large at both age levels, the groups are more alike at age 4 than at age 3 because the rate of increase is greater for the lower-class group than for the middle-class group.

In the other two categories with a large difference at both age levels, there is also a difference in pattern of development, resulting in a reversal of the relative positions of the groups. There is a difference of 15 percent in the use of accessories at age 3 and of 38 percent at age 4. At age 3, the middle-class group exceeds the lower-class group in the use of accessories (middle-class--46%; lower-class--31%); at age 4, the lower-class group exceeds the middle-class group (lower-class--51%; middle-class--13%). At age 3 the middle-class group exceeds the lower-class group in the use of three or more different signifiers by 15 percent (middle-class--56%; lower-class--41%) while, at age 4, the lower-class group exceeds the middle-class group by 21 percent (lower-class--67%; middle-class--46%).

Of the four categories with large differences at only one age level, there are two in which the pattern of development is the same in both groups. At age 4 there is a difference of 35 percent in persig differentiation (1) (middle-class--68%; lower-class--33%); at age 3 a difference of only 10 percent (middle-class--20%; lower-class--10%). Here, although the pattern of development is the same the groups are less alike at age 4 because the rate of increase in the middle-class group is greater than that of the lower-class group.

With respect to the degree to which the play was understood on the basis of actions and verbalization, the difference between the groups is large only at age 3 (middle-class--87%; lower-class--65%), the groups being virtually the same at age 4 (middle-class--54%; lower-class--59%). Although the pattern of development is the same, there is a reversal of the relative positions of the groups at age 4 because of the precipitous drop in the middle-class group (of 33%).

In another subcategory of clarity of symbolic meaning--the degree to which the play was understood on the basis of verbalization about the play--there is a large difference (of 16%) at age 4. Not only are the groups more dissimilar at age 4 than at age 3, but the difference in pattern of development (an increase in the middle-class group and a decrease in the lower-class group) results in a reversal of position of the groups. Thus, the middle-class group, which has a smaller percentage than the lower-class group at age 3 (middle-class--7%; lower-class--20%) has a higher percentage at age 4 (middle-class--24%; lower-class--6%).

And, finally, at age 4, the lower-class group surpasses the middle-class group by 32 percent (lower-class--88%; middle-class--56%) in the use of persig language (in units with human persigs),[1] while at age 3 the groups are virtually the same (middle-class--78%; lower-class--75%). The reversal of position of the groups results from a difference in pattern of development, i.e., an increase in the lower-class group and a decrease in the middle-class group.

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[1] We included only units with human persigs for this comparison because of the high proportion of units with animal persigs in one of the classes of middle-class Fours. Since children tend to use onomatopoetic sounds rather than human language when they signify animals, there is considerably less language used than there would be if there were as many human persigs as in the lower-class group.

Language. There is a large difference between the groups in the amount of verbalization, as indicated by the average number of statements per child, at both age levels. The average number of statements is 19 in the middle-class group and 13 in the lower-class group at age 3, and 21 in the middle-class group and 28 in the lower-class group at age 4. The difference is about the same at both age levels. Although the pattern of development is the same in the two groups, the reversal of positions at age 4 is due to the higher rate of increase in the lower-class group than in the middle-class group.

Our findings suggest that the lower-class and middle-class samples are much more similar than they are different. The groups were characterized as virtually alike or slightly different in 74 percent of the categories and very different in 26 percent. The pattern of development is the same in 78 percent and different in 22 percent of the categories.

Implications for Judgments of Relative Cognitive Maturity of the Symbolic Play of Middle-Class and Lower-Class Groups

The crucial question raised by these findings is: What do the similarities and differences mean in terms of the relative cognitive maturity of these two groups of children?

If there were a respectable number of developmental studies with similar categories which were clearly defined, and if there were some agreement about the presence or absence of trends, these could be used as reference points for judgments of relative cognitive maturity of the play of our middle-class and lower-class groups. As we have seen, however (pp. 8-9), the three developmental studies cited differ not only in the categories studied but in almost every other respect, including the ethnic and socioeconomic status of their populations. There is only one category, proportion of group play, which is defined clearly and in which a clear upward trend was found in two studies (Halfar, 1970; and Lunzer, 1959). We are forced, therefore, to base our inferences mainly on the presence in our own data of developmental trends which are supported by developmental theory and by Piaget's description of the evolution of symbolic play during this age period. Our inferences must be considered tentative since our sample is too small to analyze by means of statistical tests and there is no lower-class Fives sample.

As indicated in the section on developmental trends, we found trends in eleven categories. We found an upward trend in group play. Among the Symbolic Representation categories, we found an increase in the use of less representative signifiers, in persig differentiation of the highest order (1), in the presence of an emotional stance, in the use of onomatopoetic sounds, in the number of different symbolic actions and in the presence of sequential scenes. An increase in the proportion of longer play units indicated an increase in Involvement in play. We also found upward trends in three Language categories: in amount of verbalization, in giving information about or explanation of play, and in the labeling or simple description of play. For all, an upward trend is indicative of greater cognitive maturity. Inferences about the relative cognitive maturity of the symbolic play of the middle-class and lower-class groups will be made for these categories only.

Similarities in Cognitive Maturity of Symbolic Play. In nine of the eleven categories, the differences between the groups are slight or negligible at both age levels and, in one, at one age level. Because the 14 percent difference between the middle-class and lower-class groups in group play and in giving information at age 3 is on the borderline between slight and large differences, we are considering it a large difference. Thus, there are seven categories at both age levels and three at one age level in which the differences are slight or negligible.

There is virtually no difference between the two groups in the use of less representative signifiers at age 3 and a slight difference at age 4 (see Table VII-11).

Table VII-11

Comparison of Middle-Class and Lower-Class Three- and Four-Year-Olds: Type of Signifiers Used

	Number and Percent of Signifiers Individual and Group Play											
	Threes						Fours					
	Middle Class N=128			Lower Class N=117			Middle Class N=102			Lower Class N=180		
Type of Signifier	#	%		#	%		#	%		#	%	
Representative	82	64		73	62		50	49		99	55	
Semi-representative	26	20		18	15		33	32		30	17	
Non-representative	12	9	29	8	7	32	9	9	45	13	7	33
Imaginary	0	0		12	10		4	4		16	9	
Ambiguous	8	6		6	5		6	6		22	12	

Our social-class groups are also similar in the cognitive level of their play in other ways: at both age levels, in emotional stance, in the number of different symbolic actions taking place during a play episode, in the extent to which they use onomatopoetic sounds, in the proportion of play with sequential scenes, in the proportion of units lasting 21 minutes or longer and in the extent to which they label aspects of their play; and, at one age level, with regard to proportion of group play, persig differentiation, and giving information about or explanation of play (see Table VII-12).

We can infer, therefore, that the symbolic play of these middle-class and lower-class children is at more or less the same cognitive level with respect to these play behaviors.

Table VII-12

Comparison of Middle-Class and Lower-Class Three- and Four-Year-Olds: Symbolic Representation, Involvement and Language Categories

	Number and Percent of Weighted Units											
	Threes						Fours					
	Middle Class			Lower Class			Middle Class			Lower Class		
Play Category	N	#	%	N	#	%	N	#	%	N	#	%
Emotional stance	108	10	9	96	16	17	120	47	39	110	60	42
Number of different symbolic actions												
1-3	108	68	63	108	60	56	132	58	44	144	72	50
4+		40	37		48	44		74	56		72	50
Use of onomatopoetic sounds	108	26	24	108	40	37	132	65	49	144	67	47
Sequential play	92	26	28	72	16	22	120	52	43	144	36	33
Length of unit - 21'+	108	28	26	108	22	20	132	53	40	144	48	33
Labeling or simple description	108	74	69	108	80	74	132	88	67	144	107	74
Group play	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	132	110	76	144	95	66
Persig differentiation (1)	108	22	20	84	8	10	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]
Giving information, explanation	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	132	39	30	144	42	29

Note. N=total number of weighted units applicable to each play category.

[a] Omitted figures are in Table VII-14.

Differences in Cognitive Maturity of Symbolic Play. There are large differences between the middle-class and lower-class groups in only one category (amount of verbalization) at both age levels; and in three categories (persig differentiation, group play and giving information) at one age level. An upward trend was found in all four categories. We can therefore infer that the group with the higher percentage is the more cognitively mature.

We find that the middle-class group is more advanced at age 3 in amount of verbalization (average number of statements is 19 in the middle-class group and 13 in the lower-class group), while the lower-class group is more advanced at age 4 (middle-class = 21; lower-class = 28)[1] (see Table VII-13).

Table VII-13

Comparison of Middle-Class and Lower-Class Three- and Four-Year-Olds:
Average Number of Statements

Play Category	Threes Middle Class N=175	Threes Lower Class N=121	Fours Middle Class N=231	Fours Lower Class N=339
Average number of statements per child	19	13	21	28

The middle-class group is considerably more advanced than the lower-class group in persig differentiation (1) at age 4 (middle-class--68%; lower class--33%). It is also more advanced, at age 3, in the amount of group play (middle-class--54%; lower-class--40%) and in giving information about, explanation of play (middle-class--37%; lower-class--13%) (see Table VII-14).

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[1] We do not know if this finding is generalizable because of the high proportion of animal persigs in the middle-class Fours group (see footnote 1, p. 64).

Table VII-14

Comparison of Middle-Class and Lower-Class Three- and Four-Year-Olds: Proportion of Group Play, Persig Differentiation, and Giving Information

	Number and Percent of Weighted Units											
	Threes						Fours					
	Middle Class			Lower Class			Middle Class			Lower Class		
Play Category	N	#	%	N	#	%	N	#	%	N	#	%
Group play	108	78	54	108	57	40	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]
Persig differentiation (1)	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	98	67	68	132	44	33
Giving information, explanation	108	40	37	108	14	13	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]

Note: N=total number of weighted units applicable to each category.

[a] Omitted figures are in Table VII-12).

Thus, for those play categories in which we found a developmental trend from age 3 to age 6 and in which there are large differences between the groups, the middle-class group appears to be more advanced in four (at one age level) and the lower-class group in one (at one age level).

To sum up: At age 3, the middle-class children engage in more group play and use language to a greater extent for giving information about and explanations of the various aspects of their play than do the lower-class children; at age 4, the two groups are similar in these respects. At age 4, there is considerably more persig differentiation (1) among the middle-class children, while at age 3, the difference between the groups is slight. The middle-class children are also more verbal at age 3, while the lower-class children are more verbal at age 4. In all the other play categories in which developmental trends were found, the middle-class and lower-class children appear to be more or less alike.

Discussion

Our findings indicate that in classrooms where the children engage in symbolic play, the play of three- and four-year-old lower-class, mostly black children is very similar in quality to that of white middle-class children of the same age.

Since the inception of Head Start which, for the first time, brought large numbers of children from low-income families into preschool educational programs, the prevailing beliefs among American educators, psychologists and others who came into contact with these children were that they tended not to engage in symbolic play; that play occurred only after they had been in school for a considerable length of time (Gould, 1972); or, most recently, after they had been given training in symbolic play[1] (Smilansky, 1968; Feitelson and Ross, 1973; Freyberg, 1973). Their play, when observed, was described as predominantly motoric, manipulative or imitative (Sigel, 1968; Curry, 1971).

Smilansky's (1968) comparative study of Israeli children, the first major study of this kind, confirmed the belief that preschool-aged lower-class children engaged in symbolic play considerably less than did middle-class children and that the level of the play was lower. Comparative studies by two American psychologists, using Smilansky's categories and method of categorization, supported Smilansky's findings. As a prelude to an intervention study, Rosen (1974) compared black lower-class and white middle-class kindergarten children. She found that the white middle-class children engaged in more sociodramatic play than the black lower-class children and "often at a more sophisticated level" (p. 926). Griffing's (1974) population consisted of five- and six-year-old black middle-class and lower-class children. She found very clear differences between the two groups on Smilansky's six components of sociodramatic play.

Golomb, who observed 60 three- to six-year-olds from middle- to upper-middle-class and working-class backgrounds, found little difference between the two social-class groups with respect to complexity of play, "appropriate role-division" and "genuine role-enactment which transforms the actor and the objects he deals with" (1975, p. 13).

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[1] The "training" is sometimes no different from what a good nursery school teacher would provide: opportunity, interest, encouragement, stimulation and, sometimes, participation.

We shall not compare Golomb's findings with ours because her methods and categories are not given in detail in this paper. But, since Smilansky and Griffing specified the differences between their social-class groups, we can compare their findings with ours for those categories which seem to resemble ours.

With respect to the type of signifiers used, Smilansky's observation that middle-class children tend to use the less representative signifiers (including imaginary ones) while the lower-class children tend to use toy replicas (our "representative" signifiers) is not supported by our data. We found virtually no difference in the use of less representative signifiers at age 3 and a slight difference at age 4. Smilansky states that "it sometimes seems that the [middle-class] children prefer their imaginary creations" (p. 25) and are, therefore, not dependent on "toys" in their symbolic play. In our groups, only a very small percentage of signifiers was imaginary and at least half the signifiers used by both middle-class and lower-class children at both age levels were "representative" ones.

Smilansky states: "The [middle-class] child really plays the part, imitates tone and gestures, spoils and is spoiled, shouts in mock anger, speaks pompously." About her lower-class children she says only, "In most cases there is no evidence of signs, gestures, and so on, of dramatic involvement" (p. 39). Our groups were very similar at both age levels in the extent to which they expressed the feelings and attitudes of the persigs (emotional stance).

The three categories in which we found large differences between our social-class groups are similar to three of Smilansky's--group play, persig differentiation and amount of verbalization. Smilansky found that her three- to six-year-old middle-class children engaged in considerably more "sociodramatic" play than the lower-class children. Griffing also found significantly more group play among her middle-class than among her lower-class five- and six-year-old children. The difference of 14 percent between our groups in the amount of group play at age 3 bears only a slight resemblance to Smilansky's description of her groups. She says that, in the classes of advantaged children, "the impression is of many small groups (from two to six children) each involved in a lively game....In contrast, it is usual in the D [disadvantaged] classes to see only one or two sociodramatic games going on at any given time" (p. 20).

Our middle-class group is considerably more advanced than the lower-class group in persig differentiation (1) but only at age 4. Because the rate of increase from age 3 to age 4 is so much greater in the middle-class group than in the lower-class group, it is possible that there is a developmental lag in the lower-class group in this respect. Smilansky describes her groups in a way which seems similar to our definition of persig differentiation (1), but makes no age level discrimination. She says, "the [lower-class] children do not react to each other's pseudodramatic impersonations" (p. 39). About the middle-class children, she comments, "...each participant...reacts dramatically to the dramatic image projected by his fellow player, from within his own role (i.e., each calls the other 'madam,' 'Mommy,' 'dollykins,' etc.)" (p. 37).

Our lower-class group is more advanced, at age 4, in the amount of verbalization (average number of statements per child)[1] while the middle-class group is more advanced at age 3. Smilansky, who counted the number of words uttered, found that the average number of words per child in her middle-class group was twice that of the lower-class group (64 as compared with 30 during 45 minutes of play) (p. 43).

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[1] A larger sample is needed to determine whether or not middle-class Fours tend to signify animals more than lower-class Fours (see footnote 1, p. 64).

Since there is only a minimal amount of agreement on the five categories the three studies have in common, and these constitute only a small proportion of the categories studied, it is clear that our findings are very different from theirs. Because it is believed that symbolic play has a vital role in children's development, it is important to speculate about possible reasons for these differences.

That the studies differ in purpose, design and methods may be one source. Our primary objective was to investigate developmental changes in children's play. We were not concerned with whether or not or how much the children played, but with a large number of characteristics of play behavior. We therefore located our study in schools and centers where children engaged in symbolic play. Smilansky's and Griffing's and Rosen's objective was to compare lower-class and middle-class children with respect to their symbolic play. (Smilansky and Rosen also investigated the effects of training on the play of lower-class children.) They focused on quantity of play and made judgments about the level of play based on Smilansky's six predetermined play components. Smilansky and Griffing compared the groups with respect to these six play components; and Smilansky described other, qualitative aspects of play. Freyberg (1973) suggests that the use of "subscales for different components of imaginative play might elucidate the special strengths of the lower-class child" which "may be masked by the use of overall scales" (p. 153). Smilansky gave only impressionistic descriptions of the play of her two groups with respect to the qualitative categories other than the six play components. Although her descriptions indicate that the behavior of the middle-class and lower-class children is very different, we do not know how these judgments were made or to how many children these descriptions apply.

The studies differ also with respect to the age range of their populations. Smilansky, who had the largest age range (from three to six), seldom differentiated between them, making comparisons less meaningful. Because our sample consisted only of three- and four-year-olds, the mean age of our subjects was lower than that of children in the other studies. It is quite possible that lower-class and middle-class three- and four-year-olds are more alike than are lower-class and middle-class five- and six-year-olds or three- to six-year-olds combined.

Even more serious, possibly, are the differences in the ethnic, cultural, racial and other characteristics which confound the comparison of supposedly distinct social classes within all these studies, except Griffing's, as well as across studies. Cultural, geographic, and color differences may influence the degree and kind of disadvantage with which the children are burdened. Black children coming from economically improverished homes in Harlem may be very different from socioeconomically-comparable black children in small cities in Ohio or Georgia.[1] They are certainly different from lower-class Israeli children of Middle-Eastern extraction. Cultural influences may also counteract the effect of economic disadvantage. Smilansky's two studies illustrate this very well. In her preliminary study (to which we have been referring throughout) she stresses the very large differences in the symbolic play of middle-class Israeli children of European extraction and lower-class Israeli children of Middle-Eastern immigrants. In her experimental study of the effect of teaching on disadvantaged children's play, she combined into one control group both lower-class and middle-class Israeli children of European extraction because "we did not find significant differences in their sociodramatic play" (1968, p. 109).

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[1] Where Griffing's and Rosen's populations were located.

There are also differences between these studies in data-gathering procedures. Griffing (1974), unlike the other investigators who observed the children in classrooms, recorded the play of groups of four children at a time in a special playroom set up in each school. Analytic methods also differed as did methods of reporting studies. Smilansky (in her preliminary study) often uses verbal description of play behavior, seldom gives any figures and does not describe her analytic methods.

Since Smilansky and Griffing found differences between their social-class groups with respect to Smilansky's six components of play, despite differences between their respective populations and in some study procedures, differences between their category system and ours may be of primary importance. One is the difference in emphasis on verbal and nonverbal behavior. Verbalization is a criterion in four of the six components Smilansky, Griffing, and Rosen used. Except for Language, our categories involved nonverbal behavior--actions, gestures, sounds--to a great extent.

There are probably two major reasons for the emphasis on verbalization in studies of symbolic play. One is that, as adults, we depend to a great extent on what children say for our understanding of their play. The other is that verbalization is considered more cognitively advanced and, therefore, can be used as a criterion in determining the level of play. But, even at age 5, children's play has a large nonverbal component, and development in this direction is also important to measure.

There are numerous other factors which may affect children's symbolic play. Griffing (1974) found differences among her middle-class children who attended different schools, but not among the lower-class children in different schools.

Which aspects of schools and classrooms affect the amount and quality of symbolic play? The quality of the teaching, the curriculum, the materials and equipment, the teacher's attitude toward symbolic play, the organization of the preschool classroom, so standardized by now that, possibly, very economically-deprived children and children of different cultures may not be able to play out their special experiences?[1]

Only future studies can provide us with the information necessary for clarifying the differences and similarities between different populations.

C. Comparison of Individual and Group Play

We recorded individual as well as group play because we considered both essential for an evaluation of cognitive functioning and because we expected to find differences.

Individual and group play are compared for trends from age 3 to age 4, and for the frequency of occurrence of play behaviors at both ages.

Trends in Individual and Group Play

In order to clarify the differences and similarities of trends from age 3 to age 4 in individual and group play, the figures for the middle-class and lower-class groups must be combined. This was done only for categories in which the trends in the middle-class and lower-class groups are the same, that is, in both socioeconomic groups there is either an increase or a decrease from age 3 to age 4.[2] There are nine categories which meet this requirement.

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[1] Curry (1971) reports that Navajo children began to play only when, after cleaning, the doll corner furniture was left, by chance, against the wall. This was where they were accustomed to seeing furniture in their circular hogan homes.

[2] Comparisons include only the three- and four-year-old samples because the absence of a lower-class five-year-old sample and the decrease in individual play at age 5 resulted in too small a sample.

In all nine categories the trend from age 3 to age 4 is in the same direction both in individual and group play (see Table VII-15). There is an increase in play coded clear primarily on the basis of symbolic actions, in high specificity of persig, in emotional stance or quality of play relationship, in play with four or more different symbolic actions, in high repetitiveness, in units lasting 21 minutes or longer, in the labeling or simple description of play, in giving information or explanations of aspects of the play, and in the average number of statements per child. This similarity in trends suggests that developmental factors are influential here.

The rate of these increases is very similar in individual and group play except for three categories--high specificity of persig, giving information, explanation, and average number of statements per child (see Table VII-16). For high specificity of persig and average number of statements per child there are much greater increases in group than in individual play; for giving information the increase is greater in individual play than in group play. This suggests that the situational factor--whether the child plays alone or with others--is also operating.

Frequency of Occurrence

There are many large differences between the lower-class and middle-class scores in individual play and a few in group play. As a result, the number of categories of play behavior which can be compared for frequency of occurrence is substantially reduced. In 12 of the 20 categories,[1] there is a difference of more than 15 percent between the lower-class and middle-class scores.[2] We shall consider only the eight categories in which the difference is less than

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[1] Three of the 23 viable categories apply only to group play.

[2] These differences may occur from one to four times in each category--at one or both age levels, and in group and/or individual play.

Table VII-15

Individual and Group Play: Play Behaviors Which Increase from Age Three to Age Four

Play Category	Individual[a]						Group					
	Threes			Fours			Threes			Fours		
	Unweighted Units											
	N	#	%	N	#	%	N	#	%	N	#	%
Clarity of symbolic meaning of play												
Clear a (primarily on the basis of actions)	38	20	53	19	11	58	34	3	9	45	8	18
Specificity of persig	19	7	37	12	5	42	23	10	36	43	25	58
Emotional stance	19	1	5	14	4	29	30	5	17	43	17	35
# Different symbolic actions: 4 or more	41	7	17	22	8	36	35	13	37	52	25	48
Repetitiveness: Medium and High	41	14	34	22	11	50	35	16	46	52	32	62
Length of unit: 21' or longer	41	4	10	22	5	23	35	7	20	52	17	33
Language Functions												
Labeling or simple description	25	17	68	15	12	80	38	28	74	49	41	84
Giving information, explanation		5	20		8	53		10	26		18	37
Average # of statements per child	10			13			16			26		

Note. Unweighted units are used throughout this section because the scores for most of the individual play categories were not weighted. They were not weighted because the Ns were too small for determination of trends or for comparison of the middle-class and lower-class groups. A comparison of the weighted and unweighted scores of Group Play units in 22 categories indicates a difference of 4 percentage points or less in 54% of the categories and of 10 percentage points or more in only 16% of the categories.

[a] Because there was so little, parallel play was combined with individual play. See Appendix B for definition.

Table VII-16

Percentage Increases from Age Three to Age Four
in Individual and Group Play

Play Category	Individual Play	Group Play
Clarity of symbolic meaning of play: clear a	5	9
Specificity of persig: High	5	22
Emotional stance	24	18
# of different symbolic actions: 4 or more	19	11
High repetitiveness	16	16
Length of play unit: 21' or longer	13	13
Labeling or simple description of play	12	10
Giving information, explanation	33	11
Average number of statements per child	3	10

15 percent and for which, therefore, we have combined the scores of the middle-class and lower-class groups. In one of the eight categories--emotional stance--the difference between individual and group play is minor at both age levels (12% at age 3 and 6% at age 4). In the remaining seven there is a large difference at one or both age levels (from 16% to 47%).

In three of the seven categories, the behavior occurs more often in individual than in group play; in four, more often in group than in individual play (see Table VII-17). Two of the play behaviors which occur more frequently in individual play are Symbolic Representation categories. There are more individual play units than group play units in which the play was judged to be clear on the basis of actions (44% more at age 3 and 40% at age 4). At age 3, there are 25 percent more play units with onomatopoetic sounds in individual than in group play, while at age 4 the difference is minor. In the third--the use of language for giving information about or explanation of the play--there are 16 percent more play units in individual than in group play at age 4 and a minor difference at age 3 (see Table VII-18).

Table VII-17

Incidence of Play Behaviors: Large Differences (16% to 47%) Between Individual and Group Play

Greater in Individual than in Group Play	Age Levels	Greater in Group than in Individual Play	Age Levels
Clarity of symbolic meaning of play: clear a	3 & 4	High specificity of persig	4
Use of Onomatopoetic sounds	3	# of different symbolic actions	3
Giving information, explanation	4	Sequential play	3 & 4
		Average # of statements per child	4

Table VII-18

Large Differences: Incidence Greater in Individual than in Group Play

Play Category	Threes						Fours					
	Individual			Group			Individual			Group		
	N	#	%	N	#	%	N	#	%	N	#	%
Clarity of symbolic meaning of play: clear a (primarily on the basis of actions)	38	20	53	34	3	9	19	11	58	45	8	18
Use of onomatopoetic sounds	41	22	54	35	10	29	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]
Giving information, explanation	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	15	8	53	49	18	37

[a] Omitted because differences between individual and group are minor.

There are four play behaviors which occur considerably more frequently in group than in individual play: three Symbolic Representation categories--high specificity of persig (16% at age 4), four or more different symbolic actions (20% at age 3), sequential play (26% at age 3, 30% at age 4); and one Language category--the average number of statements per child (a difference of 13 at age 4) (see Table VII-19).

Table VII-19

Large Differences: Incidence Greater in Group than in Individual Play

Play Category	Threes						Fours					
	Individual			Group			Individual			Group		
	N	#	%	N	#	%	N	#	%	N	#	%
Specificity of persig: High	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	12	5	42	43	25	58
# of different symbolic actions: 4 or more	41	7	17	35	13	37		--[a]	--[a]		--[a]	--[a]
Sequential play	26	1	4	26	8	30	13	1	8	45	17	38
Average # of statements per child	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]	12	13		27	26	

[a] Omitted because differences between individual and group are minor.

Summary and Discussion

Our findings reflect the influence of both developmental and situational factors. The presence of similar trends from age 3 to age 4 in individual and group play in nine categories of play behavior points to the strength of developmental factors. In six of nine categories, the trends in individual play duplicate developmental trends found in group play.[1] The similarity of rate of increase in individual and group play, from age 3 to age 4, in six of the nine categories also reflects the strength of developmental factors.

Of the three remaining categories, the considerably higher rate of increase in two--high specificity of persig and amount of verbalization--during group play, and in one--giving information, explanation during individual play --may reflect the influence of the group situation. The high rate of increase from age 3 to age 4 in these three categories results in a large difference between individual and group play at age 4. These are, therefore, three of the seven categories with large differences between individual and group play in frequency of occurrence.

In only two of the seven categories are there differences at both age levels. Play judged to be clear primarily on the basis of the child's actions[2] occurred more frequently in individual than in group play. Thus the meaning of the child's symbolic play tends to be conveyed to the observer primarily by nonverbal means (actions, emotional stance, accessories, symbolic objects, etc.) in more than half the individual play episodes but seldom in group play. The capacity for this kind of nonverbal communication which is fostered, possibly necessitated, by the situation the child has chosen or found himself in, although not highly valued in our society where verbalization is stressed so much, is, nevertheless, of value for artistic achievement in the theatre--in drama, mime, or dance. Sequentiality of play, on the other hand, occurs considerably more frequently in group than in individual play. We have pointed out previously that the enactment of a succession of scenes requires a much higher level of mental organization than the enactment of one scene. Although the percentages are not high at ages 3 and 4 (they rise sharply at age 5), they suggest that group play may be more intellectually stimulating than individual play.

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[1] The group play trends were based on the play of the middle-class Fives as well as lower-class and middle-class Threes and Fours.

[2] Persig language and verbal dialogue may be included because they are an integral part of the symbolism of play.

Of the five play behaviors in which there are large differences at one age level (and minor at the other), the use of onomatopoetic sounds occurs more frequently in individual play at age 3 as does information-giving. The use of onomatopoetic sounds is dependent to some extent on the content of the play, being more likely to occur in motor vehicle or animal play than in play about humans. Since content of play was not included in our category system, we do not know if there was more animal and motor vehicle play among the Threes when playing alone.

We can only speculate about why there is so much more information-giving in individual than in group play at age 4. It is possible that, with the increase in verbal ability at age 4, children who are playing alone want to talk about their play and tend to give information about and explain their play to nonparticipants while, in group play, there is less need for this because they are playing with other children who know, to some extent at least, what is happening in the play.

High specificity of persig is one of three remaining categories in which the incidence is higher in group than in individual play. At age 4, not only does persig play become the dominant type during group play,[1] but the presence of other children undoubtedly stimulates greater clarity and specificity in the children's representations of others. This may account for the much higher incidence of high specificity of persig in group play at this age. It does not, however, explain why there is virtually no difference at age 3. The large difference between group and individual play at age 4 (and the minor difference at age 3) in amount of verbalization is probably due both to situational and developmental factors. The proximity of and opportunity to interact with other participants in the play makes group play more conducive to verbalization at both age levels, while the difference may be greater at age 4 because Fours are more verbal than Threes.

It is interesting that only at age 3 is there a much higher percentage of units with four or more different symbolic actions in group play than in individual play. It is impossible to determine what this means in terms of the effect of developmental or situational factors.

This comparison of individual and group play of three- and four-year-olds has shown that developmental factors are operating in individual as well as in group play. The effects of the situational factor, however, have been virtually impossible to assess because of the many large differences between the lower-class and middle-class children which occur mainly in individual play. It would be useful, therefore, to investigate the sources of the large differences between lower-class and middle-class children during individual play in view of the very few differences we found during group play.

Moore, Evertson and Brophy (1974) studied the "solitary" play of white, middle-class children in kindergartens. They state that their "findings do not support the traditional image of solitary play as indicative of poor social adjustment or imaginative fantasy resulting from emotional needs" (p. 834). They based their conclusion on the fact that "role play,"[1] "sulking and pouting," and "daydreaming" occurred very infrequently while goal-directed activities, educational play or reading and large muscle play were predominant. Since symbolic play is considered by many to be a positive factor in children's cognitive/affective development, and Golomb (1975) found a positive relationship between practice in symbolic play and the ability to conserve, I would be inclined to include it among the "mature" forms of solitary play.

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[1] It is not predominant among the middle-class children in individual play.

We are still left with a question regarding possible differences in areas of growth served by individual and group play. We suggested previously that individual play might foster those qualities important for artistic achievement. Further investigation of the individual play of a larger age range of children than we studied and, possibly, of different socioeconomic and ethnic groups separately, might provide valuable insights.

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[1] This supports our finding that persig play occurs very seldom among middle-class Fives during individual play (28%).

VIII. SUMMARY AND DISCUSSION

The aims of this study have been fulfilled for the most part.

1. Three aspects of cognitive functioning were identified which could be appropriately studied from observations of children's symbolic play in the classroom: Symbolic Representation, Involvement, and Language.

2. Methods were devised for studying these three aspects of symbolic play and were used for analyzing the symbolic play records of three-, four-, and five-year-old children.

A guide for recording symbolic play was written and used.

A manual, describing in detail the procedures for analyzing play, was written and used in the study. A glossary of all terms used in this report is included.

3. Developmental changes in group play from age 3 to age 6 were investigated. Trends were found in 11 of the 30 categories studied, some in each of the three cognitive areas.

It was not possible to develop a method for assessing the level of cognitive functioning with respect to the three areas investigated because the trends can be considered only tentative in the absence of a lower-class five-year-old sample. At this time, however, we think it is possible to use those play behaviors in which developmental trends were found as a provisional guide to the cognitive level of children's symbolic play.

4. The symbolic play of three- and four-year-old middle-class and lower-class children was compared, and areas and patterns of similarity and difference were found.

5. The individual and group play of three- and four-year-olds was compared with respect to trends and frequency of occurrence.

The developmental changes from age 3 to 6, during group play, although few in number, are indicators of areas of increasing cognitive maturity. The increase in children's ability to play with others as they get older is particularly significant, since this is the only trend in which there is agreement in three developmental studies. The increasing complexity of symbolic representation in play is manifested in a variety of ways--in the child's increasing representation, through her/his behavior and speech, of qualities of the signified person and of the nature of her/his relationship with a symbolic object or another participant in the play; in the increase in the number of different symbolic actions; in the increase in the use of sounds to represent those made by animals or objects; in the increasing tendency for the children to be different persigs and to understand the nature of the relationship between their persigs.

The increase in ability to organize the play, as manifested by the presence of successive and related scenes, is indicative of a significant advance in cognitive functioning. The growing tendency to stay with a specific play content for longer periods of time and return to the same content after an interruption (internal or external) is an important factor in children's learning. The upward trends in the amount of verbalization, in the use of language to label, and to give information about or explanations of aspects of the play, are evidence of an increasing ability to use a given symbol system (language) just as the trends in Symbolic Representation categories are evidence of the increasing ability to create more differentiated symbols and organize them on a higher level.

It is also significant that the symbolic play of our white, middle-class three- and four-year-olds was so similar in quality to that of the three- and four-year-old, mostly black children. That other comparative studies found large differences between their preschool-aged lower-class and middle-class children may be attributed to a variety of factors (discussed previously). The tendency of all comparative studies, including ours, to classify the children in terms of the socioeconomic level of their families minimizes the innumerable differences in home environment which affect the capacities and modes of behavior of young children. We do not know whether or not uncontrolled variables such as these were responsible for the differences in results. We hope that awareness of the differences in the findings of this and the other comparative studies may serve in the future as a brake on generalizations until we have more definitive findings.

Our comparison of individual and group play was intended, primarily, to determine the areas of similarity and difference in these two play situations. The many large differences between the scores of the lower-class and middle-class groups, particularly in individual play, made this comparison impossible for almost all play categories. The upward trends we found in individual play, however, further confirmed the influence of developmental factors in symbolic play. Six of these duplicate trends were found in group play, giving added weight to the influence of developmental factors on these play behaviors.

Some Unresolved Issues and Unanswered Questions

This study posed a number of questions both methodological and substantive. The major questions--What aspects of cognitive functioning can be appropriately studied from observations of children's symbolic play? What developmental changes take place in children's symbolic play between the ages of three and six? How does the play of lower-class children compare with that of middle-class children?--have been answered in the body of the report. There are several which still remain unanswered. I shall discuss some of them here.

One of the most interesting, unanswered methodological questions arises from the fact that the investigator's view of symbolic play affects the methods used for studying it and, therefore, what can be learned from the study. Our view was that you can best learn about young children's play if you define your categories, or those which are amenable to such definition, to fit as closely as possible the child's perception of reality and his way of representing reality symbolically; and also take into account the child's tendency to think associationally, to create some symbols which are ambiguous or meaningless to adults and to move fluidly, without transition, from one content to another. This view was expressed in many methodological decisions. We made up the word "persig" as a substitute for the commonly-used "role-playing" because we believed that, when a young child plays fireman, he or she is not role-playing in the usual sense, but is the fireman for the duration of the play. Our recording and our coding procedures gave equal importance to nonverbal and verbal behavior, in recognition of the action-orientation of young children as well as their developing use of language.

The definition of the play unit, which made it possible to keep the child's play intact instead of breaking it up into time samples, reflected our conception of the child's view of her/his play. Since the play unit was the unit of analysis, this procedure affected the study as a whole.

This view also affected our coding procedures. For example, the evidence required for categorizing the play as "clear" (for clarity of symbolic meaning) and "coherent" was based on the premise that young children's play is bound to be ambiguous to some extent. It is not expected, therefore, that all the symbolic actions, language, etc., in a play unit be understood in order to be categorized "clear" or "coherent." Both of these categories failed to distinguish between age levels, as did several others. We do not know why--whether our methodological viewpoint is a valid one, but the definitions of the categories were geared to younger age levels than our sample; whether adults, when faced with ambiguity, tend to project meaning and coherence on the data; or whether our coding procedure maximized the tendency to project. We do know that most of the categories need to be refined. Many play behaviors are categorized merely for presence. Greater differentiation would result if, for example, we coded not only for presence of emotional stance, but also for how many different ways the quality of the signified was expressed--through language, facial expressions, body movements and tensions, etc. In coding for sequentiality, we should code for the number of successive and related scenes enacted by the child(ren) not just for more than one. Except in two instances, we also looked at each category separately. Perhaps a more differentiated picture would result from combining two or more categories.

The definitions can be made more age-appropriate, ambiguity can be measured instead of accepted, the coding procedures can be revised to minimize the tendency to project. But, until another study can be done with refined definitions, modified procedures and a more carefully selected, complete sample, preferably with a larger age range, we shall not know if this approach is a productive one.

A developmental issue which we have not been able to resolve has to do with what happens at age 5. Because of the absence of a lower-class Fives sample, we do not know, despite some supportive evidence discussed previously, whether the reversal of upward trends at age 5 in some categories and the slowing of the rate of increase from age 4 to 5 in others are due to developmental factors. This question can and should be answered by further research in which the Fives sample includes an equal number of lower-class children, if possible. Even more important would be to add a sample of six-year-olds to determine whether the slowing down we noted at age 5 is continued at 6 and is evidence, therefore, of nonlinear trends in some aspects of play.

There are two other unresolved issues which future studies might provide information about--both having to do with the signifiers the child uses in play. The first is related to our finding that the dramatic increase in obsig play at age 5, in group play, was attributable to a switch from persig to obsig play on the part of the boys. Curry and Arnaud's (1974) description of the stages in symbolic play from age one and a half to age 8 or 9, suggests not only that there is a regular developmental sequence from persig to obsig play but also that obsig play is a more advanced stage in the distancing of the self from the play activity "by moving from self-action to toy-action." If this proves to be true--and only analysis of the group play of six- to seven-year-old boys and girls could validate it--it would be an important addition to our understanding of the use of symbolization in play. It would be additionally important because the symbols children use in symbolic play--whether themselves or the major symbolic objects they use--represent not only real people, objects or animals, but also, on a less conscious level, the children themselves--their feelings, needs, wishes. Gould (1973) found that there was consistency over time, among middle-class Threes, Fours, and Fives, in the use of "direct" I (verbalization of fantasy by the child as her/himself, e.g., "I'm a witch") or distance forms (equivalent to our persig play) of self-representation. If this should be true also of self-representation through an object (obsig play), the form of self-representation a child uses predominantly may give us insights into the child's personality just as the content of the persig or obsig would give us insight into the nature of the child's identifications.

The other unresolved issue has to do with the trend in the use of more or less representative signifiers. We found a very slight upward trend in the use of less representative signifiers. We speculated that the trend might have been more pronounced if children in preschool classrooms were not surrounded by enticing toy replicas which children apparently prefer since more than half of the signifiers used at all age levels were representative ones. We also suggested that often there are different sources for identical behavior--that, when a very young child uses non-representative signifiers, her/his choice is determined by her/his emotional need, rather than, as with an older child, the ability to transcend her/his desire for a physical resemblance because s/he has a mental image of the needed object.

If it is true that the source of young children's choice of signifiers must be taken into consideration in evaluating the level of cognitive functioning, it is obvious that counting the number of each type of signifier tells us little. It is possible, however, that, if the age range were extended to one and a half or two, at one end, and to age 7, at the other, we might find a nonlinear trend--a high proportion of less representative signifiers at the lower end of the age range, a decrease at age 3 and 4, and an increase again at age 5 and 6. If so, it would clearly indicate that the use of less representative signifiers is more cognitively mature, as Smilansky and Sigel have stated, but would define the age range for which this is an appropriate statement.

Some Suggestions for Future Research

Because the revival of interest in symbolic play is so recent, very few studies have been done. The three developmental and three comparative studies we have referred to most frequently display such diversity with respect to populations studied (various combinations of age, ethnic background, and social class), procedures for collecting and analyzing data, focus of interest, play behaviors studied and the way they are defined, that it is difficult, and often meaningless, to compare their findings. Although diversity is to be expected at so early a stage, it is possible now to learn from past efforts.

A primary need at this point is for greater clarity. Since there is no agreed-upon language for describing aspects of symbolic play, an effort must be made to define terms in unambiguous language illustrated by clear examples so that communication will be meaningful; to describe methods used for analyzing the data, not merely the statistical procedures; to air the problems which were encountered and note which solutions worked and which did not; to clarify what has been learned not only in terms of results but also of methodology.

For future developmental studies, extension of the age range so that it covers the period from age 2 (if not earlier) to age 7 seems necessary. Non-linear trends must be considered a real possibility not only because of our findings but also because of what we know about how developmental changes occur. Perhaps the next step should be longitudinal, rather than developmental studies, which would include studies of some children in depth to find out about the context and, possibly, the source of play behavior, as well as the behavior itself.

A crucial question here is whether developmental changes in symbolic play occur in an unchanging order, but not always at the same chronological ages, as replications of Piaget's studies of conservation have shown.

For developmental as well as comparative studies, there are difficulties involved in finding study populations which do not differ from each other in too many ways. Locating studies in places where the populations are more homogeneous ethnically than they are in large cities might eliminate some of these problems.

An alternative is to study symbolic play in experimental situations where it is possible to control more variables than when observing children in classrooms or playgrounds. It does not, however, provide the best solution for studying symbolic play since an experimental situation, in which a child is presented with a series of tasks, is not comparable to a classroom where children spontaneously play out their experiences, wishes, and feelings. For example, Fein (1975) found that children are able to recognize the relationship between "less prototypical" as well as "highly prototypical" objects and their real counterparts to the point where they can engage in appropriate "pretend" actions with them. But, although we know that five-year-old children can perceive the relationship between objects which resemble each other in form or function, not quite two-fifths of the signifiers used by the Fives in our study were categorized as semi-representative. And even here we cannot be sure that recognition of the relationship always determined the choice of signifier.

The study of symbolic play is still in its infancy. Some of the basic questions have hardly been touched and it may be impossible to arrive at definitive answers to them. We are beginning to learn that symbolic play is not a universal experience of young children, but we still need to document the circumstances under which it occurs and does not occur: Does it occur in less developed cultures as frequently as in more complex ones? Does it occur now in all countries, in all socioeconomic strata, in all ethnic or national groups? What factors seem to stimulate children's play? What factors tend to interfere with, discourage symbolic play, or limit the age period during which children play symbolically? What attitudes toward children and their play influence its presence and quality? What situations? What kinds of materials? What kinds of physical environment? What kinds of organization of the child's day?

Despite the large literature about the role of symbolic play in children's cognitive development, there has been only one study which has attempted to verify this (Golomb, 1975). Again, there is a growing interest in as well as a body of literature, mostly theoretical, about the relationship between symbolic play and imagination or creativity. For example, Piaget states that "symbolic assimilation" (the process through which, in play, the child transforms reality to serve ego needs) "is a source of creative imagination," but that "symbolic play will achieve its final form of creative imagination provided that it is as it were reintegrated in thought as a whole" (1962, p. 155). Empirical documentation of the process and the relationship is virtually nonexistent.

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GLOSSARY

Accessories: Dress-up clothes considered by the child appropriate for her/his persig (a jacket for a father, a silk shawl for a dancer, a fireman's hat, etc.) and other objects used in play which are not symbolic (real pots and cooking utensils, etc.).

Collective monologue: The child talks to her/himself in front of others but is not really interested in communicating with them nor does s/he expect them to respond.

Egocentric: A quality of behavior in which there is "primacy of self-satisfaction over objective recognition...and distortion of reality to satisfy the activity and point of view of the individual" (Piaget, 1962, p. 285).

Group play: Two or more children play together. Some of the interaction (verbal or otherwise) must be an integral part of the symbolic play, not just social. That is, some of the children's symbolic actions and/or verbal interchange must be related to content they are sharing.

Imaginary signifier: Signifier is an imagined object or an imagined person, animal, character which we become aware of because of the child's actions or words.

Individual play: Child plays alone. Although s/he may talk with others about her/his symbolic play, the interaction with them is not an integral part of the play.

Monologue: The child talks to her/himself as if s/he were thinking aloud.

Non-representative signifier: There is little or no objective resemblance to the signified (e.g., a block represents a baby). There is no functional or other relationship.

Obsig: What is signified when the child is making an object act as if it were another object, person, etc. (the real car which the toy car represents is the obsig).

Obsig play: Play in which the child makes an object (real or imaginary) act as if it were another (absent) object, person, animal.

Onomatopoetic sounds: Sounds made by child representing sounds of animals (meow), motor vehicles, sirens, etc.

Parallel play: Two or more children engage in the same play at the same time in close proximity to each other. There must be some evidence that the child is aware of what one or more of the other children is doing. There is, however, no verbal communication about the play or other play interaction, although there may be collective monologue or verbalization about exchange of toys or other materials.

Part persig, part obsig play: The play unit contains both persig and obsig play. This is not the same as persig/obsig play.

Persig: What is signified when the child acts as if s/he were another (a real fireman whom the child represents through her/his actions is the persig).

Persig language: Language spoken by the child as a signifier.

Persig/obsig play: Play in which the child, either alternately or simultaneously, uses her/himself and a symbolic object to represent the same person, object, etc.

Persig play: Play in which the child acts as if s/he were another (absent) person, animal, object, etc.

Play unit: A symbolic play episode in which the specific content of the symbolic play remains more or less the same throughout, e.g., train play, fireman play, etc.

It is the unit on which the analytic procedures are based.

Representative signifier: A more or less exact replica of the signified (the obsig), e.g., a toy car used to represent a real car, a baby doll used to represent a baby. If a toy car is used as if it were an airplane, it is not considered representative.

Semi-representative signifier: This resembles the signified (the obsig) in form (e.g., closet represents jail), or has some functional or other relationship to it (e.g., battery represents radio), or is a member of the same class (e.g., elephant represents a wild animal).

Socialized communication: The child talks with the intention of communicating with another person.

Symbolic actions: The actions which the child takes when s/he is making an object imitate the actions of another object, person or animal, or when s/he is imitating the actions of another person, object or animal.

Symbolic objects: Signifiers which are themselves objects (as distinguished from those which are purely imaginary).

Symbolic play: Play in which the child makes an object act as if it were another (absent) object, person, etc., or her/himself acts as if s/he were another (absent) person, animal, object, etc.

Verbal dialogue: Language used by a child when s/he is speaking to or for a symbolic object (e.g., a small figure of a man).

Talking to the symbolic object: "You wanna go there?"

Talking for the symbolic object (usually representing a person): "I want to go to bed with him" instead of "He wants to go to bed with him."

Sometimes when the only symbolic object being used represents an inanimate object (e.g., a car), the child may move the car up to a "garage" and say, "I have a flat tire," as if s/he were the driver of the car, or as if there were an imaginary person driving the car. This use of the first person should not be considered evidence that the play is persig play (and therefore that this is persig language) unless the child is performing actions of another person, animal, etc.

APPENDIX A

MANUAL OF PROCEDURES FOR ANALYSIS OF SYMBOLIC PLAY

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MANUAL OF PROCEDURES FOR ANALYSIS OF SYMBOLIC PLAY

One of the objectives of this study was to determine which aspects of cognitive functioning could be assessed from children's symbolic play in school and to develop methods for doing this. Three aspects of cognitive functioning were identified: Symbolic Representation, Involvement, and the role of Language in symbolic play. This Manual describes the procedures used for categorizing the symbolic play of three-, four-, and five-year-olds from narrative records of symbolic play.

These procedures are based on two principles:

1. That an understanding of the young child's way of perceiving and representing reality is essential and must be taken into account; and

2. That the meaning of all terms must be made explicit and all judgments based on clearly defined overt evidence.

The observer focused on one child at a time. Thus, the record contains accounts of all the child's play, symbolic and non-symbolic, the former in great detail, the latter usually in summary form. The first step, therefore, consists of the delineation of the play unit which is the unit of analysis.

DELINEATION OF THE PLAY UNIT

Delineation of the play unit entails two different kinds of differentiations:

1. Differentiation of symbolic play from other activities.

It is usually easy to distinguish between symbolic play and such activities as painting, playing lotto, and social conversations.

The crucial distinction here is between symbolic play and motoric or manipulative play. A definition of symbolic play is a prerequisite for making this differentiation.[1]

> Symbolic play: The child makes an object act as if it were another (absent) object, person, etc. (obsig play) or himself acts as if he were another (absent) person, animal, or object (persig play).

Thus, the essential element of symbolic play is the symbolic action. An action is considered symbolic if at least one of the following kinds of evidence is present:

a. Verbal evidence

   Comments about the play - about what is happening or about to happen, etc.
   Verbal dialogue - the child speaks for or to a symbolic object.
   Persig language - the child speaks as a signifier, "It's time for dinner."

b. Onomatopoetic sounds - "meow," "beep beep," etc.

c. Use of accessories - fireman's hat, high-heeled shoes, etc.

d. Emotional stance and/or quality of relationship with other participants - punitiveness, as evidenced in spanking a doll-baby.

e. Positive response to another's definition of what the child is signifying - nodding when another child says, "You're the mommy."

f. Symbolic objects - In obsig play, other symbolic objects than the one with which the child is performing the action, e.g., a block "road" on which the child moves a toy car; in persig play, any symbolic object, e.g., pieces of clay which the child uses as if they were food.

   Example: If a child is moving a toy car (an action), this is considered a symbolic (as opposed to a motoric) action if the child says, "The car is going to crash" (verbal comment) and/or he makes a motor sound (onomatopoetic sound) and/or he moves the car on a construction of blocks which resembles a road (other symbolic object).

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[1] Definition of all terms is given in the Glossary as well as in the body of the Manual.

> Example: If a child is standing in front of a toy stove, moving pots and pans around on it (an action), it is considered a symbolic (as opposed to a manipulative) action if the child says to the teacher, "I'm the mommy and I'm cooking dinner" (verbal comment) and/or to another participant in the play, "It's time for dinner" (persig language) and/or is wearing high-heeled shoes (accessory) and/or "feeds" the other children in a nurturing fashion (quality of relationship with other participants).

2. Differentiation of one symbolic play unit from another.

The criterion for differentiating one symbolic play unit from another is that there is a difference in the specific content of the play.

> Example: wearing a fireman's hat, is sitting on a block construction making driving motions and siren sounds. He gets off the construction, takes off his hat and moves to the house corner. There he puts on a man's jacket and hat and plays with the dolls, feeding them and putting them to sleep.

Here, the fireman play constitutes one play unit and the doll play another.

The play unit, differentiated in this way, is the unit on which the analytic procedures are based.[1]

CATEGORIZATION OF THE PLAY UNIT

After the units in a play record have been delineated, each play unit is categorized individually. Because of the large number of categories, each unit is categorized for Symbolic Representation, Involvement, and Language separately.

In any play unit, the play of the child who was observed is subjected to analysis. During group play the judgments are based primarily on the individual child's play, although what the other participants say and do undoubtedly affect it.

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[1] See Attachment A for detailed directions for determining the beginning and end of the play unit.

Although only three simple types of categorization are used--number (of symbolic actions, signifiers, etc.), presence (of onomatopoetic sounds, persig language, etc.), and ratings (of degree of specificity of persig, etc.)--some preliminary coding (precoding) is necessary for most categories.

We used a coding sheet, devised for the Symbolic Representation and Language categories, which entailed transfer of the symbolic play content to the appropriate columns (see Attachment B). Thus only symbolic actions (not motoric or manipulative ones), symbolic objects, and language relevant to the symbolic play are included. Persig language is distinguished from non-persig language and, in group play units, the actions and language of other participants from those of the child who was observed. In addition, all actions and verbalizations are numbered in order of occurrence. We found this procedure helpful, especially for long, complex units, because it eliminates all irrelevant details, clarifies the sequence of the play, makes repeated readings of the record unnecessary, and makes it possible to read all the data in selected categories without reading all the rest.

Preliminary coding for the Involvement categories was done on the typed record.

I. General Categories

A. Type of play: Individual/Group

Check one of the following:

Individual: The child plays alone. Although s/he may talk with others about her/his symbolic play, the interaction with them is not an integral part of the play.

Parallel: The child being observed and one or more other children engage in similar symbolic play at the same time in close proximity to each other, without verbal communication about the play or other play interaction. There must be some evidence that the child is aware of what one (or more) of the other children is doing.

Group: Two or more children play together. Some of the interaction between the child who is the subject of the observation and one or more other children must be an integral part of the symbolic play, not just social. That is, some of the children's symbolic actions and/or verbal interchange must be related to the play content they are sharing.

When a play unit contains both individual and group play, it is group play if there is more group than individual play and the categories which apply to group play can be coded.

Categorization of a play unit as individual, parallel, or group play is important for assessing an individual child as well as for obtaining information about a group. For the latter, individual and group play must be considered separately because, in group play, the influence of other children on the child's play introduces a factor which is not present in individual play.

B. Type of content

Check one of the following:

Content consists of real-life activities, persigs or situations:

Content consists of fantasy-superhuman-magical activities and persigs. The symbolic actions and/or the persig(s) have superhuman, magical qualities and characteristics which are associated with many TV characters but are not restricted to them.

Content consists of TV, storybook, or other characters and situations which do not have magical, superhuman qualities.

Content is a mixture of one or more of the above categories.

For group comparisons, play concerning real-life activities, etc., must be separated from those with fantasy-superhuman-magical activities because the latter tend to be less differentiated than the former.[1]

The following procedures were used for analysis of play in which the content consists of real-life activities and situations, and those which the teacher did not actively stimulate or participate in.

II. Symbolic Representation

A. Type of play: Obsig/Persig

Check one of the following:

Obsig: Play in which the child makes an object (real or imaginary) act as if it were another (absent) object, person, animal, etc.

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[1] See Virginia Stern, Cognitive aspects of young children's play, in Progress Report of Research Studies, 1969-1970. Head Start Evaluation and Research Center, Bank Street College of Education.

Persig: Play in which the child acts as if s/he were another (absent) person, animal, object, etc.

Persig/obsig: Play in which the child, either alternately or simultaneously, uses her/himself and a symbolic object to represent the same person, object, etc.

Example: The child sits on a "fire engine" construction, making driving motions and siren sounds; then he picks up a small figure of a man, puts it in a small "fire engine" and moves it on the floor, uttering motor and bell sounds.

Part persig, part obsig: The play unit contains both persig and obsig play. This is not the same as persig/obsig play.

B. Type of signifier

Note the number of each type of signifier.[1]

Representative: A more or less exact replica of the signified object, e.g., a toy car used to represent a real car. If a toy car is used as if it were an airplane, it is not considered representative.

Semi-representative: This resembles the signified in form (e.g., a closet represents a jail), or has some functional or other relationship to it (e.g., a battery represents a radio), or is a member of the same class (e.g., elephant represents a wild animal).

Non-representative: There is little or no objective resemblance to the signified object (e.g., a block represents a baby). There is no recognizable functional or other relationship.

Imaginary: The signifier is an imagined object, person, animal or character which we become aware of because of the child's actions or words.

C. Clarity of Symbolic Meaning of Play

Check either clear or unclear.

1. Clear: Symbolic meaning of the play is clear.

There is a recognizable central content (e.g., the play has to do with trains, selling things in a store, family activities). One or more of the symbolic actions, verbalizations, etc., may be ambiguous, contradictory, or seemingly unrelated to the central meaning (e.g., the play is about firemen and putting out fires, but rubber elephants are also part of the play).

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[1] We noted the number of different signifiers of each type, but we now think this differentiation is not relevant here.

If the content is not clear, there is enough evidence that the child represents a recognizable person, animal, object, etc., with high (a mother) or medium (a driver of a vehicle of some sort) specificity (see p. 8).

Check clear a and/or clear v.

a. Primarily on the basis of non-verbal components of the play.

In obsig play, on the basis of the child's actions with a signifier, real or imaginary, and one or more of the following:

onomatopoetic sounds
verbal dialogue
other symbolic objects used by the child (including constructions)

Example: Kevin moves a large truck on a block "road," saying "beep beep" repeatedly.

In persig play, on the basis of the child's symbolic actions as a persig and one or more of the following:

onomatopoetic sounds
persig language
emotional stance and/or quality of relationship with other participants
symbolic objects, accessories used by the child

Example: Ronnie then went over to the "vehicle" with three steering wheels. He sat behind the front wheel, made motor sounds and turned the wheel. He continued to turn the steering wheel, making different kinds of sounds: "ooooooooo..." a hoarse sound in the back of his throat, and then a high-pitched sound, while pressing his left foot forward on the floor. He had a little red plastic-capped metal wire which he manipulated with his left hand.

v. On the basis of the child's verbalization about the play (about what is happening, about to happen, or about the persig); or

On the basis of the child's positive response to verbalization by other participant(s).

Example: Roger (four years old) was busily beating the water in a basin with an egg beater. He put a metal plate in the basin and took it out almost immediately. He then took a metal toy coffee pot from a shelf, filled it with water at the sink and emptied it into the basin. He filled the coffee pot and poured the water from the coffee pot into the plastic pitcher. Then he turned to the teacher and said, "I'm makin' poison and stuff."

2. Unclear: Symbolic meaning of the child's play is ambiguous or unintelligible.

Example: Daniel (three years old) picks up a figure of a man and lies down on the floor, cradling his head on one arm. He moves the figure about and talks to himself (or possibly to the man figure) saying, "Mailman, mailman, boom-da-boom-da-boom."

Precoding: Since only symbolic materials and verbalization about the play are relevant for this judgment, some precoding is necessary for play units in which many symbolic components are present. This may be done by transference to a coding sheet, underlining or in some other way distinguishing the symbolic components (symbolic actions, onomatopoetic sounds, symbolic objects and imaginary signifiers, accessories, persig language, emotional stance and verbal dialogue) and verbalization about the play from other actions, objects, and verbalization used in the play.

D. Complexity (differentiation/elaboration) of Symbolic Play

Some of the following subcategories apply only to persig play, one to obsig play only, and some to both. They are grouped in that order.

The persig play categories apply to persig/obsig and part persig, part obsig units as well.

1. Specificity of persig

This applies only to persig play units which have been categorized clear with respect to the symbolic meaning of the play (not the persig).

Children may represent people, animals, plants, or inanimate objects in their symbolic play. Examples given below are indications of the degree of differentiation expected from age three to six.

Rate on the following scale:

1. High specificity

   Examples:

   family position--mother, grandfather, husband, daughter

   occupation--doctor, teacher, fireman, bus driver

   animal--dog, cat, bird, dinosaur, lion

   plant--tree, shrub, flower, vegetable

   object--bridge, tunnel, airplane, truck, Empire State building

2. Medium specificity

   Examples:

   family position--grandparent, parent, child

   occupation--a driver of a vehicle, type unknown

   animal--a wild or domestic animal but otherwise undifferentiated

   object--a vehicle but undifferentiated as to type

3. Low specificity

   Examples: a human being, an animal, a plant

   A reading of the symbolic components of the play, precoded for categorization of clarity of symbolic meaning, will provide the necessary data for this rating.

2. Emotional stance or quality of play relationship with other participants

   This category applies only to persig play.

   Check for presence of emotional stance.

   This refers to the qualitative aspects of the persig: to the expression by the child of the emotional quality of the persig (e.g., nurturance, bossiness, fear, aggressiveness) through symbolic actions, persig language, facial expression or other non-verbal means.[1]

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[1] Not to the quality of the child's social relationships with other children during the play.

It may occur when a child is playing alone or with others, with or without a symbolic object.

Examples:

The child, with a ferocious look on her/his face, runs around on all fours. S/he growls threateningly, then shows her/his teeth.

The "mother" screams at her "child": "You wash your hands or I hit you."

Juana and Richard lie on a rug with their arms around each other. Juana strokes his cheek. Then she sits up suddenly, says, "Hey, daddy, we got morning time. We got morning time, daddy." Richard pulls her down and they lie with their arms around each other again.

Precoding may be done on a coding sheet or on the protocol by notations of the quality of the child's behavior (e.g., "loving" or "angry") when the evidence is present in the record.

3. Persig language

This applies only to persig play.

Check for the presence of persig language.

Persig language is language spoken by the child as signifier (e.g., "All aboard" when the child is a conductor on a train).

Persig language must be distinguished from language that is about, or related to the symbolic play as well as from language spoken during the play episode but unrelated to the play, such as social conversation.

Precoding: The coding sheet enabled us to record persig language in one column, other play-related but non-persig language in another, and the remarks of other participants in the play in another.

Precoding can, however, be done on the protocol or in any other convenient way.

This is an area in which there is a good deal of ambiguity, and in some cases it is impossible to determine whether the child is speaking as a persig or not. This happens most often when it is not clear whom or what the child is signifying and, during obsig/persig play, when it is difficult to distinguish between persig language and verbal dialogue.

4. Persig differentiation

This applies only to group, persig play units which have been categorized clear.

Rate on the following scale:

1. The child and one or more other participants are clearly different persigs; and

   the child seems to understand the nature of the persig of one or more other participants and of the relationship between her/himself and the other(s).

   Verbalization by the children that they are different persigs is not sufficient. The children's actions must be different.

   Example: Daniel (who is being observed) and Amy play dog and master. Daniel crawls on all fours, growls, sits on his haunches and offers his paw to Amy. He also makes comments indicating that he knows what he is representing, e.g., "Doggy's house, you can't come in." When another child says she is a dog and wants to join the play, Daniel says, "You have to tell the master." He gives other evidence of his understanding of the relationship between dog and master. He accepts Amy's hitting him on the rump and saying, "Bad dog," and asks her, "Can Laura be a dog, too?"

2. The child and one or more other participants are clearly different persigs; but

   the child seems unaware of or confused about the persig of the other participant(s) and of the nature of the relationship between her/himself and the other(s).

   Example: Linda and Dick, both four-year-olds, are in the doll corner. Linda, wearing a long skirt, lies on the bed. Dick tries on several hats, puts a jacket on, looks at himself in the mirror, then lies on the bed with Linda. He gets a stethoscope, puts the ear pieces in his ears and points the end at Linda. Then he puts the end in his mouth and blows at Linda. Linda gets off the bed and lies in the baby carriage. Dick lies on the bed again and then gets up. The rest of the play consists of Dick's putting on and taking off hats, jacket and stethoscope, and occasionally blowing through the stethoscope at Linda.

3. No persig differentiation.

   Example: All the children are "driving" while sitting on the same construction.

5. Use of Accessories

   This applies only to persig play.

   Check for use of accessories.

   Accessories are dress-up clothes considered by the child appropriate for her/his persig (a jacket for a father, a silk shawl for a dancer, a hard hat for a fireman, etc.) and other objects used in play which are not symbolic (real pots and cooking utensils, real tools, etc.).

6. Verbal Dialogue

   This applies only to obsig or persig/obsig play.

   Check for presence of verbal dialogue.

   Verbal dialogue is language spoken by a child either to or for a symbolic object (e.g., a small figure of a man or woman) or an imaginary object or person.

   Examples: Talking to a small figure of a man: "You wanna go there?"

   Talking for a small figure of a child: "I wanna go to bed."

   Sometimes the only signifier is an inanimate object such as a car. The child says, "I have a flat tire," as s/he moves the car up to a garage. This is considered verbal dialogue on the assumption that the child is speaking for an imaginary driver.

   Precoding: As with persig language, it is useful to precode so that distinctions can be made in advance between verbal dialogue and persig language in persig/obsig play.

7. Number of different symbolic actions

   This applies to obsig and persig play.

   Note the number of different symbolic actions performed by the child.

   To be counted, each action must be both symbolic and different.

   For evidence indicating that an action is symbolic, see pp. 2-3.

Different refers to the action, not to the symbolic object being used in the action.

> Example: If a child moves a car, then a truck, then a fire engine along a block road, with no qualitative difference in the movement, it is counted as only one action.

> Example: The child moves a car on a block road making a purring motor sound. Then s/he moves a truck, making sounds suggesting the shifting of gears and acceleration. Then s/he moves a fire engine, and makes loud siren sounds. Each of these would be counted as one different action--three in all.

Precoding: For units in which the child performs many actions, precoding may be necessary. On our coding sheet there is a column in which the child's symbolic actions are listed. There is also space, in an adjoining column, to number the different symbolic actions. Underlining or numbering on the protocol may serve the same purpose.

8. Repetitiveness of play

This applies to obsig and persig play.

Rate the play with respect to the degree to which the child repeats her/his symbolic actions, as follows:

1. Low - little or no repetition

2. Medium - some repetition

3. High - a great deal of repetition

Precoding: Indicating on a coding sheet or in some other way the symbolic actions which are repetitions of others is useful since it clarifies the number of repeated in relation to unrepeated (i.e., different) symbolic actions.

9. Use of onomatopoetic sounds

This applies to obsig and persig play.

Check for presence of onomatopoetic sounds.

These are sounds made by the child, usually in conjunction with symbolic actions, representing sounds made by animals (e.g., meow), motor vehicles (e.g., motor sounds, beep beep), fire engines (e.g., siren or bell), guns, etc.

10. Number of different signifiers

This applies to obsig and persig play.

Note the number of different signifiers (does not include the child as signifier).

a. number of real objects used as signifiers (e.g., a block representing a car).

b. number of imaginary signifiers (e.g., a child says, "Look at my pretty ring," as she holds out her ringless hand).

To be counted, these must be both symbolic and different.

In order to be considered symbolic, at least one of the following kinds of evidence must be present:

verbal evidence, spoken or written
Example: the child picks up a piece of clay, says, "I'm going to drop this bomb."
Example: the child puts a written sign on her/his construction, e.g., "zoo."

onomatopoetic sounds
Example: the child makes siren sounds when moving a fire engine.

actions with or relevant to the object
Example: the child takes a long block, holds it as if it were a gun, aiming it at another participant in the play.

other symbolic objects (including construction)
Example: the child puts a toy car in a block enclosure.

Symbolic objects are considered different only if they are differentiated verbally or through actions.

Examples: The child takes several small cars from a shelf, puts them in an enclosure s/he has built which s/he labels "garage." If s/he then moves them along a "road," making the same motor sounds for all, they are considered one different signifier, even if they are different in appearance.

If, however, the child then takes a little dump truck out of the garage, puts sand in it, moves it along the "road" and then dumps the sand out at the side of the road, it is counted as a second different signifier since it is differentiated in function from the others.

Precoding is useful for differentiating symbolic objects from non-symbolic objects (and for noting the evidence on which this judgment is based), real from imaginary signifiers, and the different from the non-different signifiers.

E. Organization of Play

1. Coherence

This category applies only to play which has been coded clear and in which there are at least three different symbolic actions.

Coherence refers to the degree to which the various symbolic components of the play are related to a recognizable central content.

This central content must consist of at least two different symbolic actions which are related to each other. In group play, the central content may be inferred from the play of all the participants.

> Example: Tracy picks up a block and holds it to her ear. She talks into it, saying loudly, "Hey, fireman, the house is burning down. Come over." (Action 1) She puts the block-telephone down. (Action 2) Jenny, wearing a fireman's hat, comes toward her, riding a large wooden truck and making siren sounds. (Action 3).

The central content here is "fire" play.

Rate on the following three-point scale:

1. High coherence: All or most of the child's symbolic actions (and the other symbolic components of her/his play) are related to the central content of the play.

   In persig play, the other components to be considered are: accessories, obsigs, persig language, onomatopoetic sounds and emotional stance.

   In obsig play, the other components are: onomatopoetic sounds, verbal dialogue and other obsigs.

2. Medium coherence: The symbolic components are divided about evenly between those related to the central content and those which are not.

3. Low coherence: There are fewer symbolic components related to the central content than are unrelated.

Precoding: Precoding is especially useful for judgments which depend on a number of symbolic components and the separating out of what is relevant and what is not. The repetition of symbolic actions, onomatopoetic sounds, etc., may give a false impression of coherence if one is reading the whole record.

2. Sequentiality of play

This applies to play which is coded clear and consists of two or more different symbolic actions.

In group play, the judgment of sequentiality is based on the group's play as well as the individual child's.

Check one of the following categories:

1. Sequential: The play consists of two or more scenes which are related in terms of basic content.

   Example: In Scene 1, Tess feeds a doll from a plastic bottle, irons a bib and puts it on the doll. In Scene 2, Tess puts on some dress-up clothes and joins several other children, who are wearing adult clothing, say they are "going to the office," and walk around the tables. In Scene 3, Tess comes back to her baby, picks it up, saying, "My baby needs diapers." She gives "money" to another child, saying, "You get diapers." When the child returns, Tess takes the "diapers," says, "Here's your diaper, baby." She then sits, holding the doll, and wraps it in a blanket tenderly.

2. Not sequential: Play consists of two or more different symbolic actions which constitute only one scene.

   Example: Paul, crawling on all fours, growls at Amy and makes aggressive gestures at her with his paws. She fights back. Paul lies flat on his back on the floor, says to the teacher, "Doggy's dead."

A reading of the symbolic components of the play precoded for categorization of clarity of symbolic meaning will provide the necessary data for this rating.

3. Lability of play

This applies to play which is coded clear and consists of two or more different symbolic actions.

In group play, the judgment of lability is based on the group's play as well as that of the individual child.

1. Labile: The specific content of the play or the child's persig changes without verbalization or changes in materials.

   Example: The children decide to play "store," get specific materials for the store and then engage in family play.

2. Stable: The specific content of the play and, in persig play, the child's persig, remain essentially the same throughout the play unit.

   Example: Same as for Not sequential (p. 16).

A reading of the symbolic components of the play precoded for categorization of clarity of symbolic meaning will provide the necessary data for this rating.

III. Involvement in Play

A. Length of Play Unit

The number of minutes during which a child stays with a specific play content even though s/he may interrupt it one or more times in response to external or internal stimuli.

Since the delineation of the play unit is the first step in the analytic procedure (see pp. 1-3), it is merely necessary to note the number of minutes the play lasted.[1]

B. Proportion of Time Devoted to Symbolic Play During a Play Unit

This applies only to play units lasting two minutes or longer.

Rate on the following scale:

1. High - more than half of the play unit devoted to symbolic play.

2. Medium - about half of the play unit devoted to symbolic play.

3. Low - less than half of the play unit devoted to symbolic play.

Precoding is useful and can be done on the protocol.

For play units with few interruptions, we indicated the interruptions for activities which were not part of the symbolic play by putting a check in the margin and, for long units with many interruptions, we noted the approximate time the interruptions lasted. They may include:

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[1] The accuracy of this notation will depend on the method used for noting time by the observers.

1. Effective external interruptions (i.e., those which actually divert the child from her/his symbolic play) such as interruptions by a teacher (to foster a social-play relationship, to suggest another play activity, for disciplinary purposes, etc.), interruptions by children (initiation of conversations unrelated to the symbolic play, etc.), unusual situations (someone photographing the children, visitors --if the children are not accustomed to them--window-cleaner, Fire Drill, etc.);
2. Interruptions to the symbolic play initiated by the child her/himself, such as, motoric or manipulative play with symbolic objects used in the play (punching the keys on a cash register when this action is not part of the symbolic play, etc.), other play activities (painting, etc.), social conversations, response to bodily needs (going to the toilet, drinking water, etc.), response to general environmental stimuli, i.e., to normal activities going on in the classroom which are not directed at interrupting the child's play (noise, other children's play, a child's arrival, etc.).

Comparison of the number of minutes devoted to symbolic play with the number of minutes the play unit lasted provides the data for categorization.

C. Intensity of Absorption in Symbolic Play

This applies only to play units lasting two minutes or longer.

Rate on the following scale:

1. High absorption in symbolic play
2. Medium absorption in symbolic play
3. Low absorption in symbolic play

Cues for rating are as follows:

(1) Number of self-initiated interruptions

(a) In response to internal stimuli, e.g., going to the toilet, getting a drink of water, hugging a child with whom s/he has not been in contact, going to the teacher to talk about what s/he is doing, or for help or approval, switching to another symbolic content or to another play activity, temporarily being an observer of instead of a participant in the symbolic play.

Exception: If the child talks to a non-participant in her/his play--the teacher or another child--about her/his play, and it seems not to be a digression but rather evidence of the child's absorption, it is not considered a self-initiated interruption.

Example:
Danny (excitedly to Teacher): "The whole house blowed up."
Teacher: "What are you going to do?"
Danny didn't respond.
Rob: "It goes pow."
Both children then left for another room yelling, "Help, help."

Exception: Going to get more materials to use in her/his play, even if it involves talking to a teacher or child(ren) about it, does not constitute a self-initiated interruption.

(b) Response to Observer's presence (awareness of--indicated by child's looking at O--contact with or verbalization about).

(2) Unusual excitement about content of play (e.g., in fire play)

(3) Extension of symbolic meaning and play affect beyond usual limits (for children aged three to six)

(a) Child insists that the symbolic meaning which s/he attributes to an object, place or person (including her/himself) be recognized by others, and may even try to get others to change their behavior with respect to this object, etc. In most cases, there is evidence of strong affect.

Example: The child is in a "boat" (a construction) which s/he is "rowing" in the "water" (the floor). When another child walks on the floor near her/his boat, s/he yells excitedly, "Don't go there. You'll drown."

(b) The child's persig-related affect is so strong and persistent that s/he may not be aware of the possible or actual negative effect of her/his actions on others, i.e., s/he is carried away by the symbolic situation s/he has created.

(4) Lack of response to external interruptions

(a) Child's lack of response to active efforts by the teacher or another child to get her/his attention.

(b) Lack of response to loud noises nearby or other hard-to-ignore environmental stimuli.

(c) Ignoring teacher's direction to stop her/his play.

While ratings are dependent, for the most part, on the number of self-initiated interruptions, the other three cues, when present, point to a high degree of absorption in the play.

Precoding: Self-initiated interruptions are already precoded for proportion of time devoted to symbolic play. Marginal notes indicating content of other cues are also helpful.

IV. The Role of Language in Play

Each child's play-related language is categorized for its function(s) in the symbolic play and for type of communication at the same time.

A. Functional Categories

1. Planning of Play (Pre- or ongoing)

Check for presence

a. Simple global statement or question. The general nature of the play must be mentioned (e.g., "Let's play house" or "You wanna play house?")

Undifferentiated statements or questions, e.g., "Can I play with you?" are not included. There must be more specific verbalization of what the child is thinking of playing.

b. Planning specific details of the play

Examples:
Content of play - "Let's cook."
Persig(s) - "You be the mommy and I'll be the daddy."
Materials and equipment to be used - "We need the carriage for the baby."
Locus of activity - "Let's play in the house."
Who should participate - "Let's get Danny."
Next actions - "We can go to the hideout and shoot from there."
Construction - "Let's make a fire engine truck with blocks."

Questions as well as statements can be categorized in this way. For example, "When are your men coming out of the house?" when it is part of a planning discussion.

Negative as well as positive statements may also be considered planning, e.g., "No, I don't think he should be trapped in."

2. Substitute for action

Check for presence

The child talks about her/his own action (past, present or future) which does not take place.

Examples:
"Let's pretend I already returned from work."
"The daddy is tired and is going to lie down."

3. Labeling or simple description of play

Check for presence

This refers to the labeling of symbolic components of the play only (symbolic objects, actions, situations, persigs) --the child's and other participants'.

Although it usually accompanies ongoing play, it may apply to what the child or another participant has just done.

Examples:
Content of play - "I'm playing train."
Child's persig - "I'm the baby."
Other child's persig - "You're the mother" or, as a question, "You my little boy?"
Symbolic objects - "That's my bus."
Construction - "This is the garage."
Ongoing actions - "Steering down the hill...skidding my brake."
Situation - "There's a fire."

4. Giving information about or explanation of play

Check for presence

Examples:
Giving information entails more than a label or simple description. For example, if a child who is playing "shark" says, "I'm a shark," that's labeling. But if s/he says, "Sharks eat people," that's giving information. It is also giving information if a child, after looking in a box for a cape, says to another child, "No capes in there."

Giving explanation: "You can't get up. You're in the hospital now."
"The car must go to the garage because it needs gas."

5. Other language functions

Check for presence

This includes any categorizable remarks which do not fit any of the other categories.

Examples:
Expression of wish or need - "I want to be the sister."
Expression of approval or disapproval - "That's a good garage."
Expression of agreement - "O.K." when another participant says, "I'm the mommy."
Telling another participant what to do - "Put the plates on the table."

Precoding: As indicated previously, the child's language was coded simultaneously for the functional categories and for type of communication. The coding sheet facilitated categorization because all irrelevant language was omitted and the child's remarks were entered either in the persig language or the non-persig language column, while those of other participants were entered in a separate column.

B. Type of Communication

For this group of categories and for amount of verbalization we counted the total number of statements made by the child during each play unit. For the sake of brevity, the word "statement" is used as a substitute for "language scoring unit" which is defined as any statement, question, or exclamation that fits one of the functional category definitions. Because young children's language often is elliptical, the scoring unit may consist of a word, a phrase, or a sentence, complete or incomplete. Thus, it is not a fixed unit.

If there is immediate repetition of a statement, only the first one is counted.

1. Monologue: The child talks to her/himself, as though s/he were thinking aloud, about her/his ongoing play or about what s/he is going to play. S/he shows no interest in communicating with others.

Note the number of statements.

Monologue may occur in group as well as in individual play since there are times, during group play, when the child is alone.

Example: "Steering down the hill--skidding my brake."

We also categorized persig language and verbal dialogue as monologue when there was no intent to communicate with another real person. Sometimes the child talks to an imaginary person or animal; sometimes to a symbolic object.

Examples:
Talking into the telephone, the child says, "I'll be home soon, Mommy. Goodbye."
As a policeman, talking into a walky-talky, the child says, "Go to Green Street. There's a hold-up."
Talking to a doll, "It's sleepy time, baby. Here's your bottle."
The child talks for a small figure of a man which is under a pile of blocks in a building, "Get me out, hurry up, I'm trapped."

2. Collective monologue: The child talks to her/himself in front of others, but is not really interested in communicating with them nor does s/he expect them to respond.

   Note the number of statements.

   This applies to individual as well as group play since other children may be present but not engaged in the same play.

   Example: David takes a puzzle and sits at the same table as Kevin. He says something to Kevin then begins to play with a piece of the puzzle which represents a car, making motor noises and moving it on the table. He then says to himself, "A car is a car. This is a Chrysler car. Here it comes."

   The examples of persig language and verbal dialogue given under Monologue would be categorized as Collective Monologue if other children are present.

3. Socialized communication: The child talks to others with the intention of communicating with them.

   Note the number of statements.

   This applies both to group and individual play.

   In group play, the child may talk to other participants in the play as a persig or, as her/himself, talk to them about the play.

   S/he may talk also to non-participants about the play during group or individual play.

Precoding: This entails noting to whom the child directed each statement or that the child was talking to her/himself (if given in the record or inferable from the context in which the statement was made), and distinguishing between persig language and verbal dialogue. The coding sheet facilitates these steps as well as the counting of the child's statements.

Precoding can be done, however, on the protocol or in any other convenient way.

C. Amount of Verbalization

Note the total number of statements made by the child during a play unit.

To the total number of recorded statements is added the number of incomplete statements included in the record which could not be categorized, as well as the number of statements spoken by the child which could not be recorded at all but were noted by the recorder.[1]

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[1] Noise, the physical set-up of the classroom, etc., sometimes makes it impossible for the observer to hear what is being said, although she knows that the child is talking. The number of statements noted under these circumstances is always an underestimation.

ATTACHMENT A

HOW TO DETERMINE THE BEGINNING AND END OF A PLAY UNIT

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HOW TO DETERMINE THE BEGINNING AND END OF A PLAY UNIT

The criterion to be used for determination of the unit is specific content of the play.

I. Beginning of the Unit

1. Verbalization by the child frequently indicates the beginning of a unit:

   a. Announcement of intention (or positive response to other child's announcement). This may be in declarative form ("I'm going to play train") or in the form of a question to another child re whether s/he can join her/his play, or to the teacher for permission, etc.

   b. Definition of content of play ("Let's play train") or of persig ("I'm the daddy").

   c. Planning of play with other child(ren)--choosing content, persigs, materials.

   d. If there is persig play, this verbalization may take the form of persig language.

   If the verbalization is preceded by the child taking an object which s/he then uses symbolically in her/his play, or by putting on of dress-up clothes which s/he thinks are appropriate to her/his persig, the unit would begin with these actions.

   If the verbalization is followed by a short interlude (child- or other-initiated) after which the child proceeds to play, the unit begins with the verbalization.

2. When there is no verbalization, the unit begins at the point where there is a symbolic action (based on evidence listed in the Manual, p. 2). If action is preceded by the child taking symbolic object(s) which s/he uses in this action, the unit begins there.

II. Termination of the Unit

The unit ends when the child engages in some other activity or in other symbolic play with different specific content and, at no point during the play period, returns to the original play content.

If the child continues to be the same persig but the specific content of the play changes, the unit ends (and the new one begins) with the new content. For example, if the "mother" cooks food, feeds the "child," then takes the child to the zoo, and the "zoo" content becomes predominant, the trip to the zoo is a separate unit. The same rule applies to persig/obsig play.

None of the following indicates that the unit is ended:

1. Interruptions to the play (child- or other-initiated), as long as the child returns to the same specific content.
2. Seemingly ambiguous, contradictory, unrelated symbolic actions, if there is evidence that there is a central symbolic meaning of which they are a part.
3. A change in persig (e.g., the child is first a mother then a child) as long as the specific content remains the same.

ATTACHMENT B

CODING SHEET

ATTACHMENT B

CODING SHEET*

Child's Name ______________________ T.-init. _____ Coder: ______________
School & Class ____________________ T.-stim. _____ Date: ______________
Date of Record ____________________ T.-part. _____

(1) Play Unit No.	(2) Diff. Symb. Action No.	(3) Symbolic Actions Onomatopoetic Sounds	(4) Type of Signifier	(5) Symbolic Objects Imag. Signifiers Accessories	(6) Non-Persig Language (Verbatim)	(7) Persig Language (Verbatim)	(8) Emot. Stance &/or Qual. of Play Rel.	(9) Verbalization and/or Actions of Other Participants

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* The actual coding sheet is 17 by 11 inches. It has been reduced in size for the sake of convenience.

APPENDIX B

GUIDE FOR RECORDING SYMBOLIC PLAY

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GUIDE FOR RECORDING SYMBOLIC PLAY

WHAT TO RECORD

Record the play behavior of one child during the whole indoor play period. Take summary notes when the child is not engaged in symbolic play. Take narrative records of the symbolic play, that is, as much as you can record of what the child does and says and concomitant body movements, stances, and facial expressions. Include actions, sounds, or words even if they make little or no sense to you. Symbolic play is full of ambiguities.

Include in the play record:

(1) The setting: Where is the child during the play you're recording? Where does he start and where does he go? Whom is he with?

(2) In group play, record as much as possible of what the other participants do and say. A verbatim record is not essential. It is important to be aware of the responses of the child who is being observed to others' actions or speech as well as others' responses to the child.

(3) Non-participants' responses to the child's actions or remarks. Record lack of response also.

(4) Record the teacher's role in the child's play.

Specifics

Since it is virtually impossible to record everything the child does and says as well as the way s/he says and does it, it is helpful to be cued in to the specific details required for categorization of the records with respect to Symbolic Representation, Involvement, and Language, as follows:

Symbolic Representation

(1) The child's actions: The actions should be described, not your inference about their meaning. For example, "The child was sitting on a chair,

making steering motions with his arms"; not "The child was driving a car."

(2) Onomatopoetic sounds (includes non-stereotyped sounds if they are symbolic).

(3) Accessories used by the child.

(4) Facial expressions and body movements, stances, tensions which are evidence of the emotional quality of the child's symbolic behavior.

(5) Symbolic objects (includes block constructions).

> It is difficult for the reader to visualize objects being used symbolically by a child unless they are described. Even toys which are more or less exact replicas of real-life objects, such as toy airplanes, come in many sizes, are made of different materials, may be mechanical toys or not, etc. With less representative objects, descriptions are even more essential. For example, batteries, which come in different shapes, sizes, and/or are used for many different purposes, should be described not only in terms of perceptual attributes but also of function, e.g., flashlight, car, radio battery.
>
> If an object is being used symbolically (i.e., one object used to represent another), it is not sufficient to say, "He was using the battery as a plane." The evidence which made you conclude what it was should be included, e.g., verbalization, sounds, actions, emotional tone.
>
> Quick sketches of block constructions are often useful.

(6) The child's language, verbatim if possible. Indicate (by dots, spaces, etc.) words or sentences you have been unable to hear or record. Try to record the child's language as s/he speaks it, not as adults do.

If the child's verbalization is a response to someone else, indicate who it is.

Note whether or not the child was directing her/his remark(s) to specific person(s); if so, to whom, and what the other's response was. If no response, indicate that and also the circumstances, if relevant, e.g., the other child was talking to someone else.

Indicate if the child is talking to her/himself (i.e., s/he does not want or expect a response).

Note tone of voice, pitch, volume--the quality of speech.

If the child is speaking to or for a symbolic object, note what the object is (a small figure of a person, a tiny car, etc.). The quality of voice often changes when the child talks for a symbolic object and this should also be noted.

If the child uses personal pronouns in conversation, indicate to whom the pronoun refers, if you know.

Involvement

Time notations. The purpose of time notations is to evaluate the length of the play unit as well as proportion of the play unit devoted to symbolic play.

For the former, it is essential to indicate the following:

(1) When the symbolic play begins.

(2) When the child switches from symbolic play to another play or other activity. (This is not necessarily the end of the play, since the child may return later to the same play content.)

(3) When there is a change in the content of the symbolic play (e.g., from "train" play to "house" play). Since this is not always easy to judge while recording, make a time notation whenever you think there is a change.

(4) When the play ends, if different from (2).

For proportion of play unit devoted to symbolic play, note interruptions to the child's play (self- or other-initiated). If it is more than a momentary interruption, note the time when the child returns to her/his symbolic play.

Note the source of interruptions directed at the child--a teacher or a child--and the child's response to it.

If there is an unusual situation--a photographer taking pictures, a particularly loud noise, a window-cleaner--note whether or not the child seems to be aware of it and, if so, what her/his response is.

Note child's awareness of Observer (e.g., glances at O, talking to another child about O), as well as any interaction with Observer initiated by the child.

Note particularly if a child seems to be carried away by her/his play to the extent that s/he is less able than usual to control her/himself, e.g., hurting another child if s/he is a wild animal or a monster.

Note how the play ends. Does the child leave of her/his own accord? on the suggestion of another child? or of the teacher? because it is time to clean up? etc.

THE WRITE-UP

Clarify the record and fill in details immediately after recording, before they are forgotten.

For the final write-up (as soon as possible after the record was taken) a relaxed, leisurely approach will produce the best results. Try to recall the situation--where the child was physically, what was the context, how the child looked, her/his mood, etc., i.e., anything that might concretize the situation so that forgotten details can be retrieved.